ENGINEERING NEWS-RECORD

General Itschner heads a strengthened Corps p. 21

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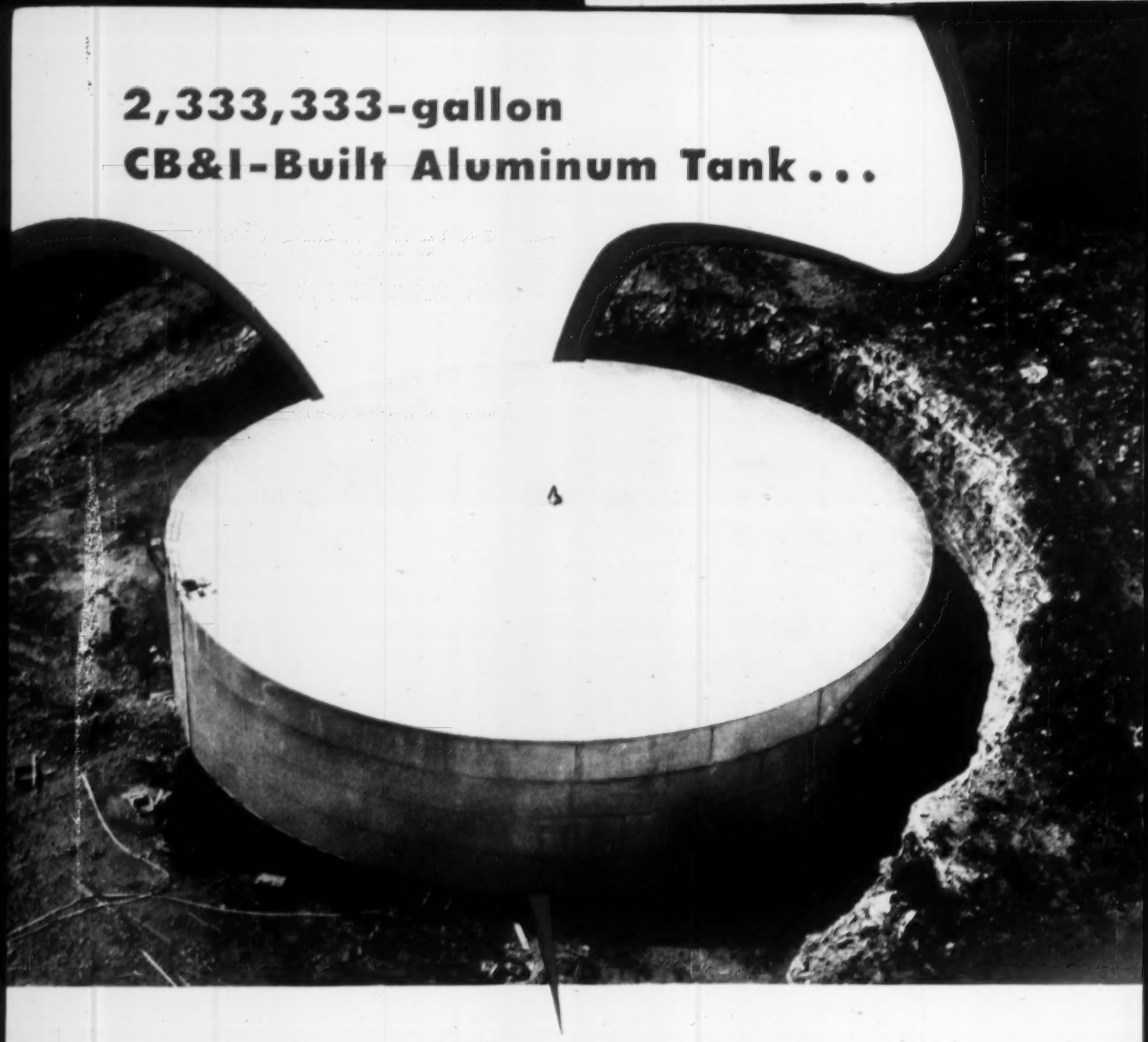
2,333,333-gallon CB&I-Built Aluminum Tank...



stores 83% ammonium nitrate

It's the world's largest all-aluminum tank. 120 ft. in diam. by 26 ft. high and constructed of more than 300,000 lbs. of Alcoa aluminum, it was fabricated and erected by Chicago Bridge & Iron Company for the Mississippi River Chemical Company at Selma, Missouri. Providing storage for 2½ million gallons of 83% ammonium nitrate, it provides Mississippi River Chemical Company uninterrupted storage service with a minimum of maintenance.

Chicago Bridge & Iron Company has complete facilities at four plants to design, fabricate and erect special and standard plate structures of steel or other special metals to meet your most rigid specifications.

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ON THE NEWS FRONT WITH STRUCTURAL STEEL

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Architect: Melvin Grossman, Miami Beach; *Structural Engineers:* Obeler & Clarke, Miami Beach; *General Contractor:* Robert L. Turchin, Inc., Miami Beach; *Steel Fabricator and Erector:* Ludman Steel Co., Miami.

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On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

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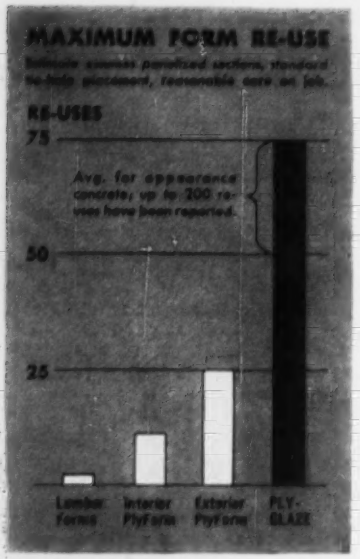

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PROJECT: Storm sewer for City of Ft. Lauderdale, Fla.

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CONTRACTOR: Inter-County Construction Co., Ft. Lauderdale, Fla.

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Years Ahead in Performance

on today's tough jobs!

Another job where the TC-12 proved its ability to get more work done faster—land clearing in Virginia. Excellent maneuverability in tight quarters, steady flow of power, and typical Euclid brute strength, make this Twin-Crawler a dependable top performer for this kind of big tractor work.

The TC-12 has no equal for pushloading large scrapers or pulling big earthmoving equipment. Each track is driven by a separate engine and Torqmatic Drive giving the Euclid tractor outstanding maneuverability. On their Indiana Turnpike contract, Union Builders kept the job ahead of schedule with a fleet of "Euc" scrapers pushloaded with the TC-12.

Compare the accessibility and performance of the TC-12 with your present big tractor equipment—your Euclid dealer has facts and figures from all kinds of jobs.

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Equipped with a Tipdozer, this TC-12 proved a versatile machine on a big subdivision grading job. It pushloaded a fleet of big Euclid scrapers—getting heaped loads of 21 and more yards in a hurry—and did a lot of land leveling and clean up work itself.

Cedell and Oman put their first TC-12 to work pushloading "Euc" Scrapers on a 3 million yard railroad job in Georgia. Independent track drive, good visibility for the operator and power matched to the job requirement enables the TC-12 to maintain maximum scraper production.

Easy operation of the TC-12—Torqmatic Drive eliminates master clutch and manual gear shifting—makes this "Euc" a high production machine. For a relocation project on U. S. Route 16 in Michigan, Sugden and Sivier used a cable controlled blade for dozing.

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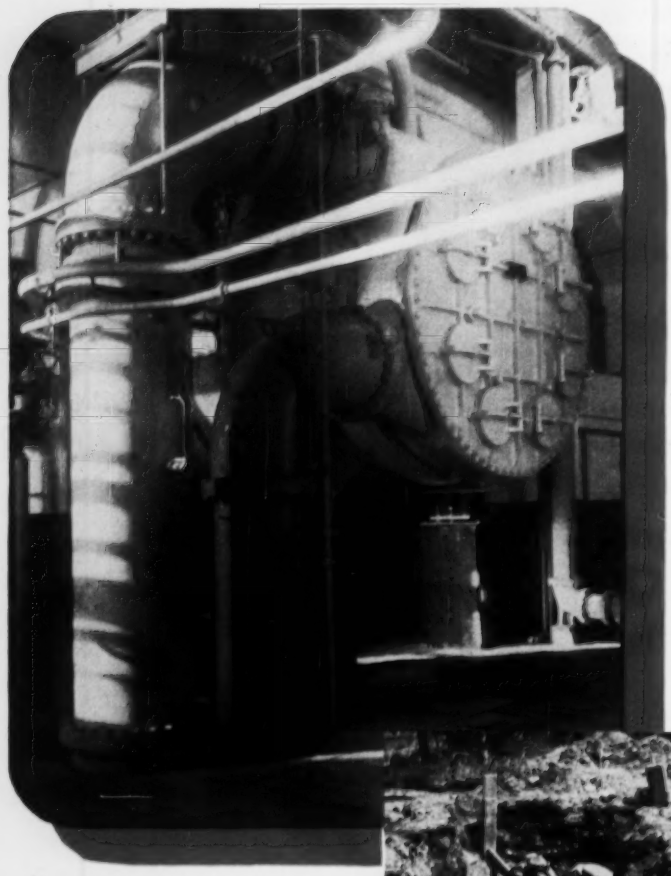
Cleveland 17, Ohio

build it to last with



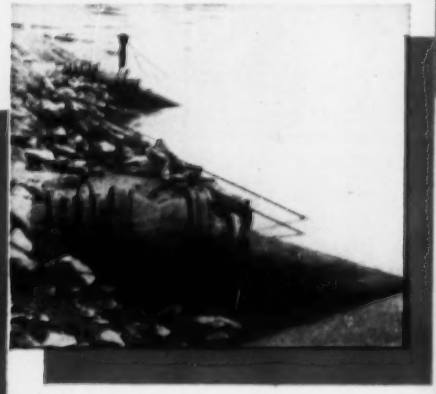
Cast iron flanged pipe and valves on steam condenser in Louisiana oil refinery.

When an installation should be as permanent as men and materials can make it, rely on rugged, long-lived cast iron pipe. Its uses are many — a few are shown on these pages. Yes, you build it to last with cast iron. Today, *modernized* cast iron pipe, centrifugally cast and quality controlled, is even tougher, stronger and more durable than the pipe our industry made a century ago. Cast Iron Pipe Research Association, Thos. F. Wolfe, Managing Director, 122 So. Michigan Avenue, Chicago 3, Illinois.

CAST Q IRON

The Q-Check stencilled on pipe is the Registered Service Mark of the Cast Iron Pipe Research Association.

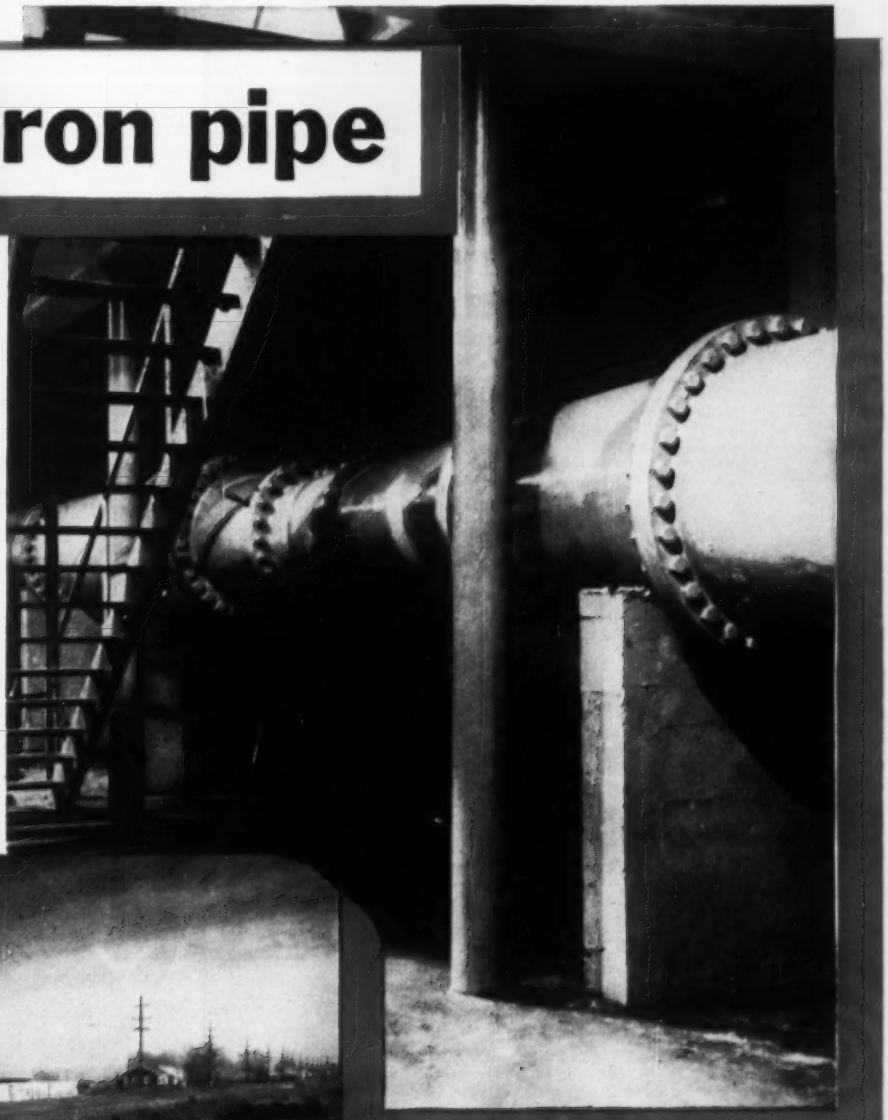
Installing 4,000 feet of 30" cast iron pipe for sewer force main in Petersburg, Virginia.



Installation of 36" mechanical ball joint cast iron pipe for Missouri River intake lines of St. Louis County Water Co.

CAST IRON PIPE

cast iron pipe



Cast iron 36" discharge line installed in South Essex Sewerage District Pumping Station, South Essex, Mass.

8,000 feet of 16" mechanical joint cast iron pipe for feeder gas main in Forest View Subdivision, Chicago, Ill.

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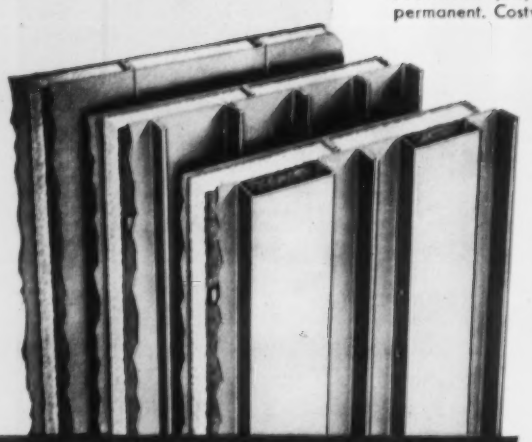

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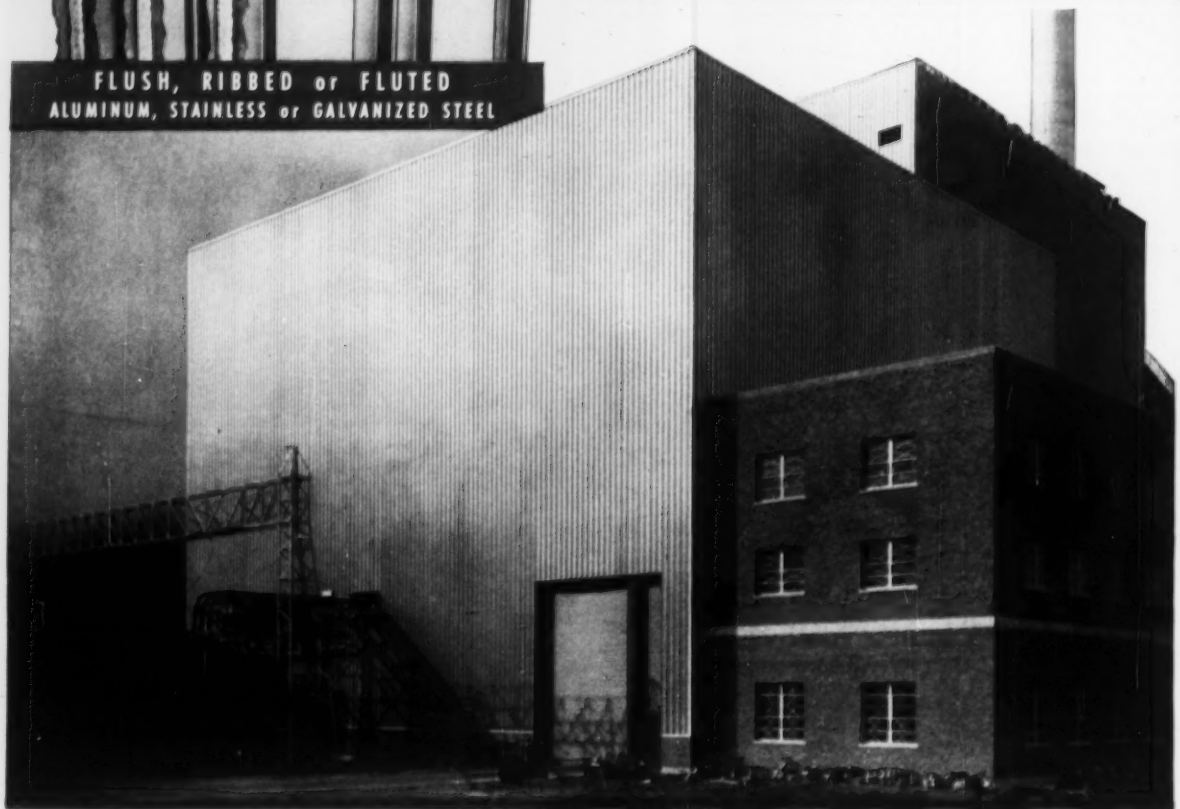

Unit No. 1 of Laurel Station of the Hartford Electric Light Company. Mahon Insulated Aluminum Curtain Walls of the Fluted Pattern were employed for the high structure of this new steam generating plant designed and built by Stone & Webster Engineering Corporation.

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When the picture was taken last year, the Stannard firm was constructing a section of new state highway between Wichita and Augusta, Kansas. The old road had contributed to a number of accidents and was often subject to flooding. Included in the contract were the laying of 28,000 square yards of pavement and building 2400 feet of storm sewers. The No. 12 is shown here spreading a 4-inch layer of granular sub-base before paving.

Caterpillar Motor Graders have won their position of leadership on a hard dollars-and-cents basis. They're economical to operate because they're built to work month after month with little or no down time. Their balanced design and ample power handle tough jobs without strain. Operators like their positive controls, fast, accurate blade positioning and complete job visibility from the seat.

The No. 12 has always been a cost-cutting machine. Now two major improvements make it a more economical piece of equipment than ever. An *exclusive oil clutch* practically does away with disc replacement, cuts down time to the bone. And *new tubeless tires* get rid of costly tube and flap trouble, run cooler, wear longer—and at no extra cost.

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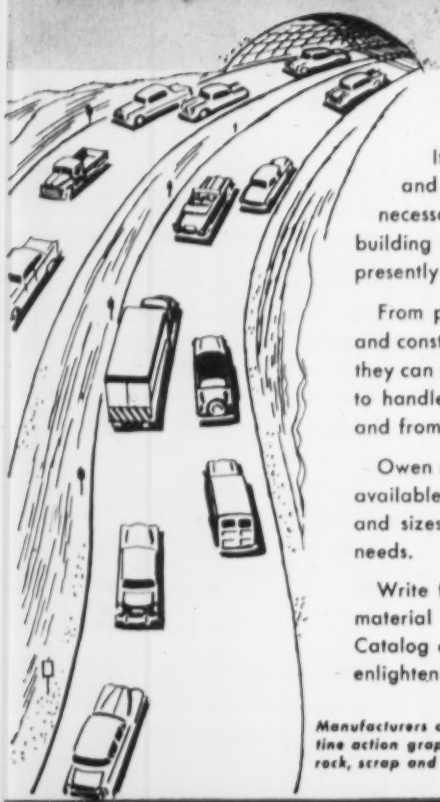
99% OF ALL CAT MOTOR GRADERS EVER BUILT ARE STILL AT WORK

Photo courtesy of Hornischfeger Corp.

from SANDPILES to SUPERHIGHWAYS with OWEN BUCKETS "ON THE JOB"



It will take a "heap" of sand and gravel to make the concrete necessary for the tremendous road building programs forthcoming and presently under way.

From past experience, batch plants and construction jobs everywhere know they can rely on their OWEN BUCKETS to handle the loads from cars to pile and from piles to hoppers.

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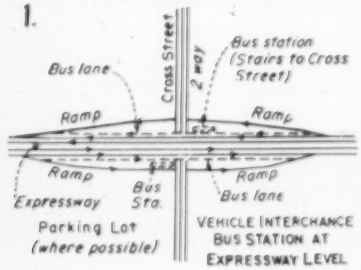
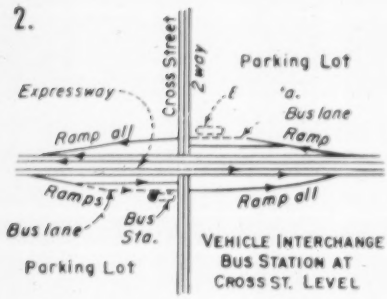


——Each lane required for Expressway and vehicle interchange

- - - -Additional lanes etc., required for bus operation

2.



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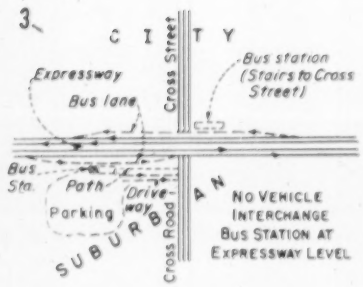
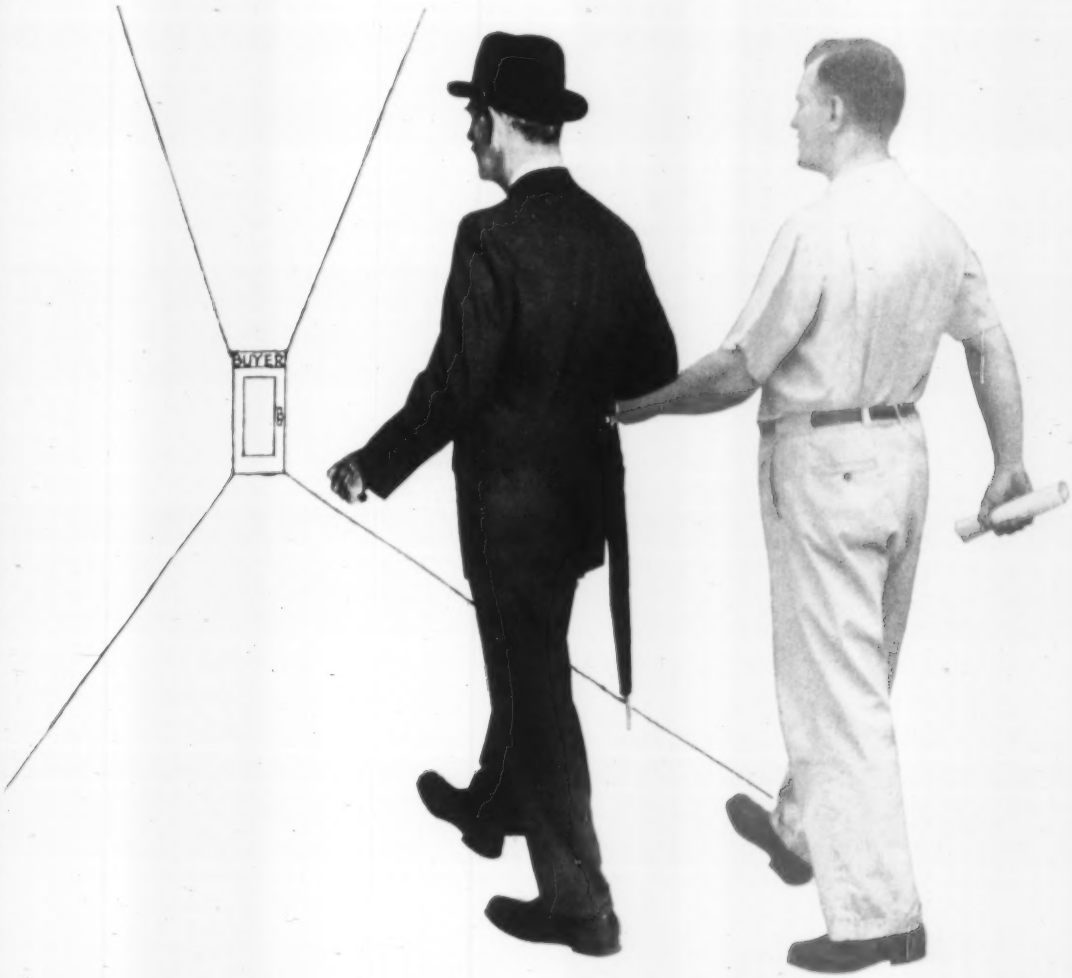


Bus Stops for Expressways

SIR—The limited access highway, including the expressway or turnpike, has been used primarily by the private auto, secondarily by the truck and to a limited extent by the passenger bus.

It is quite usual to think of mass transportation in terms of rail lines, either commuter service or rapid transit trains operating within the city in subways or on elevated structures. The writer does not agree that the rail line is always the best solution for mass transportation. The rail line has its place where the movement of passengers is very heavy. Efficient and economical operation demands, however, that such a rail line must be provided with numerous feeders and must not be extended into thinly populated regions. Furthermore in order to provide express



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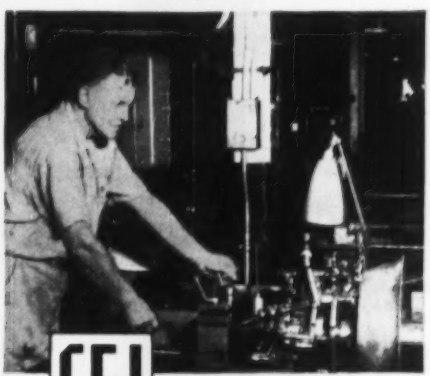

This closer operator—running a machine which forms our rope—is with your Wickwire Rope Distributor every time he makes a call.

True, he's physically in the mill, where he's carefully conducting this final fabricating operation. But, whenever your Wickwire Distributor makes a call, he has the full assurance that every foot of Wickwire Rope has been carefully assembled by skilled craftsmen . . . and that it will give you long, trouble-free service on your job.

It's just one more reason why your Wickwire Distributor knows he's got top-quality wire rope, slings and strand to sell . . . and that these products will serve you well.

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0-1-0 is the model designation of the Butler *one-man operated,* automatic Roadbuilders Plant . . . And to you as a contractor it means such a sharp reduction in costs you can bid any paving job successfully against any competition owning "yesterday's" equipment.

The highway authorities wholeheartedly approve the BUTLER 0-1-0 for all gates are so completely interlocked they cannot discharge until correct weights are in the hopper . . . nor can the batcher be charged until the previous batch is cleared. Quality control is absolute! Human errors cannot occur and the engineer's life is easier.

BUTLER BIN CO.

Other BUTLER 0-1-0 features

- Keeps two 34E drum pavers busy.
- Master controls pre-set at each batcher for any batch proportion. Easily re-set when specification changes.
- Batches sand, cement and 2 sizes of stone simultaneously, automatically.
- One man at cement batcher operates all 3 plants with push button control.
- If desired, truck drivers can actuate sand and stone batchers with push-buttons mounted on bin columns.

For the full story of the BUTLER 0-1-0 Plant write for detailed, illustrated Bulletin. Just a postcard will bring it to you immediately. Write today — while you are thinking about it.

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because this concrete looks better, lasts longer!

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Besides improving workability, Atlas Duraplastic Air-Entraining Portland Cement gives concrete greater durability . . . fortifies it against freezing-thawing weather and scaling caused by de-icing salts.

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. . . Reader Comment

as well as local service, such a rail line should have more than two tracks.

But better use can be made of the expressway for mass transportation. At present, buses using expressways or turnpikes generally must leave the expressway, proceed to some nearby town or village for discharging or pick-up of passengers, and then re-enter the expressway.

It would seem more logical that passengers should be brought to the expressway bus to pick up, thus speeding the through-bus schedule. This would mean certain changes or additions in expressway design to eliminate interference or delays to other vehicles using the expressway.

The exchange of passengers between expressway buses and transportation on the cross street can be done in these ways:

- At a conventional vehicle interchange, by connecting the exit lane and the entrance lane. This would act like a siding on which a platform could be erected at expressway level, with stairs leading to the cross street (See Fig. 1).
- By providing an extra lane, reserved for buses, at the point where exit lane meets the cross street, with platform for exchange of passengers. In this case, the entrance ramp should be placed opposite the bus exit, so that the bus could re-enter the expressway and proceed on its way (Fig. 2).

By either of the above methods no new entrance or exit above the normal requirements of the vehicle interchange would be necessary.

The first method would allow faster operation of the buses, while the second method would allow considerable saving in bridge construction and be more convenient for passengers with cross street transportation, since no stairs would be needed.

- In the suburbs or open country, capacious parking lots should be provided adjacent to bus stops for the convenience of commuters.

CHARLES FLEOCK
Consulting Engineer
Philadelphia

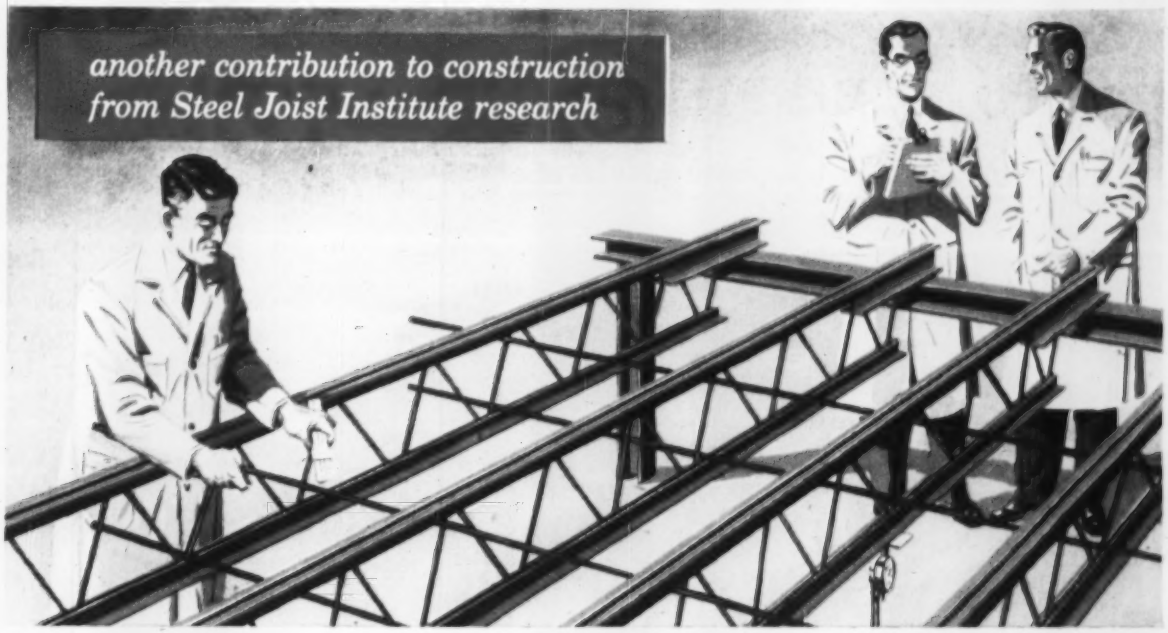
CALENDAR

University of Illinois and Portland Cement Assoc., seven lectures on thin-shell concrete structures, Navy Pier, Chicago, Ill., 7 pm to 9 pm, Oct. 9, 16, 23.

Rail Steel Bar Association, fall meeting, Sheraton-Mount Royal Hotel, Montreal, Canada, Oct. 15-16.

American Society of Civil Engineers, annual convention, Wm. Penn Hotel, Pittsburgh, Pa., Oct. 15-19.

American Road Builders Association, annual meeting and road show, Chicago Amphitheater, Jan. 28-Feb. 2.



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ENGINEERING NEWS-RECORD

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THE CONSTRUCTION WEEK

CONSTRUCTION MONEY FOR SUEZ—Bearing out the editorial in ENGINEERING NEWS-RECORD (Sept. 27, p. 128) that it was money for construction improvements and not the much publicized problem of acquiring experienced pilots, that would plague Egypt in its operation of the Suez Canal—Egyptian officials in the U. S. this week showed great interest in a rumor that oil and shipping company executives might be willing to advance construction funds under certain conditions. A total of $1½ billion is mentioned as being needed over the next fifteen years. ENR's editorial prediction was $1 billion.

ASWAN DAM STILL "ALIVE"—Although financing plans for Egypt's High Dam at Aswan have fallen through, none of the investigation and design contracts have been cancelled. An Egyptian engineer will go to France next week to confer on model studies under way at Grenoble; design work continues in the London office of the consulting engineers, and a meeting of the international consulting board is scheduled to be held in Cairo in the near future.

FULL SPEED AHEAD—Although early granting—or even eventual approval—of an FPC license to the Power Authority of the State of New York for the Niagara Project appears very doubtful to most observers, PASNY Chairman Robert Moses has requested a $350,000 loan from New York State for preliminary engineering studies. Moses seems to think early FPC approval is assured and wants to save six months time. At last reading (ENR Sept. 13, p. 28), FPC had referred the license request to its Law Division since Congress has specifically reserved to itself the right to decide who shall develop power at Niagara Falls.

THE WATER'S FINE IN MID-STREAM—Wayne County, Mich., has rejected Detroit's offer to supply it with water (ENR June 28, p. 26) and is going ahead with its own $50-million tap of the Detroit River below Detroit. The project was studied by Hazen & Sawyer, New York, who, in an outstandingly comprehensive report, show that the lower Detroit River is not what it is often called, "the sewer for metropolitan Detroit"—at least not in mid-river where the water "is generally at least 150 times better than along the shore." Final plans are to be completed in March 1957, the project itself early in 1960.

OPTIMIST'S PROPHECY—Cement shortages in the Middle West and South seem to be a thing of the past. An 18-state survey by Marquette Cement Manufacturing Co. reveals that cement plant capacity in the area will total 157 million barrels by the end of this year—a 27% increase over the 124-million barrel capacity at the end of 1955. While cement consumption will total 111 million barrels, only 3% above last year.

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ARMCO SEWER STRUCTURES

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WASHINGTON OBSERVER

Look for a complete investigation of the state of the new highway program early next year—regardless of which party wins control of the House and the Senate.

Reason: Key congressmen find there is no clear picture yet as to (a) how the states are coming along with their highway plans and (b) whether there will be steel, cement, equipment and manpower to get the job going on schedule. Already, Congressman Fallon, who is chairman of the roads subcommittee of the House Public Works Committee, has promised that the committee will begin to work on such questions as soon as Congress comes to town in January.

•

Federal agencies may get authority to meet private pay-scales for engineers particularly those that are hardest to come by. The White House is behind the Budget Bureau officials who are now preparing legislation that would permit government personnel directors to match dollar for dollar the pay that engineers can get elsewhere.

Details are still being worked out—but the plan is aimed directly at helping such agencies as the Bureau of Public Roads and the Army's Corps of Engineers. Both of these agencies are finding their staffs thinning and that they are being left out when it comes to hiring college graduates.

Army Engineers, for their part, can make regulars out of more reservists. They got Congress to help out, to make the service more attractive to ROTC graduates, who might otherwise go into civilian work (see page 21). The Corps now can offer 600 additional reservists now on active duty the prospect of regular commissions.

•

Contractors can now see how the new tax on trucks will be applied under a proposed schedule just published by the Internal Revenue Service. The law Congress passed places a tax of $1.50 a year on trucks having loaded weights of 26,000 lb or more at a rate of $1.50 per 1,000 lb.—off-highway trucks are exempt.

IRS has a table showing taxable gross weight based on loads normally carried by trucks of different unloaded weights. Tax will be based on the schedule rather than actual weights carried. A two-axled truck tractor, for example, with an unloaded weight of 9,000 lb or more will pay a tax on a gross weight of 50,000 lb under the proposed schedule.

You have until October 17 to protest the tentative schedule. Tentative date for making the first payment—an annual one—is November 30. After this payments will fall due on July 1.

Equipment put in service during the year will be taxed only for the months of the year it operates.

•

Contractors are watching the Supreme Court for labor decisions it will be making on cases during the term that has just opened.

A big case involves the San Diego Building Trades Council. The question is whether a state can enjoin picketing against an employer who is involved in interstate commerce, but too small to be taken up by the National Labor Relations Board.

NLRB's refusal to take a case like this has created a no man's land. In this case, the state moved in, and now the Supreme Court must decide whether it can intrude on federal jurisdiction.

Other labor issues include the right to strike on a wage re-opener rather than waiting until the contract itself expires, and political spending by unions.

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- **Maj. Gen. Emerson C. Itschner is back from a round-the-world look at his outfit**
- **He liked what he saw—found morale and efficiency at a new high**
- **It's a Corps reassured, revitalized by retiring Chief of Engineers, Lt. Gen. S. D. Sturgis**
- **And now Itschner, youngest chief, in 118 years, looks ahead with confidence.**

A New Chief Takes Over a "New Corps"

Vincent B. Smith
Washington Staff

A Corps of Engineers with a new lift and a new outlook last week greeted Maj. Gen. Emerson C. Itschner when he took the oath that made him Chief of Engineers.

Itschner took over a clear-eyed chins-up outfit. A new spirit and a new confidence pervade all parts of this worldwide combat-construction team.

Morale is good and is steadily getting better among the 10,000 officers, 50,000 civilians and 100,000 troops that make up the multi-faceted Army Engineer organization.

A transformation has taken place in the last three years. The future of the Corps looks much brighter than it did when Lt. Gen. Samuel D. Sturgis, Jr., took charge at the beginning of 1953.

At that time, the heavy demands met and mastered by the Corps during World War II and the Korean emergency had left an inevitable train of difficult problems. The problems tied back partly to speedy wartime expansion of combat and military construction strength, partly to the necessary hold-down on civil works in the same periods.

With Korea following so closely, the Engineers had been able to make no more than a start toward resolving these problems when Sturgis was called back from command of the Communications Zone, U. S. Army, in Europe to take over the Corps.

Today, the situation is radically changed. On the sorest point then hurting the morale of the engineers—Congressional criticism of their conduct in building the North African airbases—the Corps and its contractors have won vindication when the real facts on rushing construction against heavy obstacles at a critical juncture in world history were laid down.

Another dark cloud has likewise been dissipated. The Second Hoover Commission in 1955 removed the constant threat that the Corps would be stripped of its civil works functions, as recommended in the 1949 report of the First Hoover Commission. Not only did the second report leave flood control and rivers and harbors where they were, but it commended the engineering competence of the Corps and its unblemished record of honesty in money matters during more than 130 years of civil works construction.

Civil works operations of the Engineers had been under sharp attack in Congress during the years before Sturgis took command. And relations with the Budget Bureau and with other departments—Agriculture, Interior and Air Force—were anything but cordial. Three and one-half years of peacetime effort by the Chief of Engineers and his people have considerably improved if not completely corrected these conditions.

In the same period, the Corps made systematic and substantial progress toward building up its effectiveness as a combat arm—the prime purpose of its being. And it started well-planned campaigns that aim to make the Corps more attractive to officers and civilian engineers. Results are already beginning to show.

A tremendous amount of intelligent and energetic work remains to be done before the Corps can attain its present objectives. Ability to carry on the task—on the basis of principles already well established—was the special qualification that determined the selection of a Chief of Engineers to succeed Sturgis.

The Corps has a number of general officers who are qualified in all respects to fill the office of Chief. All these officers were, to use an Army term, in the "zone of consideration," when a successor to Sturgis had to be selected. Because their records placed

Sturgis retiring chief, started with worries . . .

Wound up his term with situation well in hand.

them all on about equal footing, something more than technical qualifications had to be weighed in making the choice.

As it turned out, the appointment named an officer who is dedicated to the same principles that set the tone of Sturgis' tenure. Itschner is a firm believer in the basic policies that his predecessor preached and practiced.

Army Engineer personnel rely on Itschner to apply the morale-building fundamentals just as earnestly as did the retired Chief.

Early in his term, Sturgis made it clear that he meant what he said. He proved as much when he spoke out strongly in public meetings and government conferences on the African bases, and again when he told the White House that U. S. Steel ought to pay half the cost of deepening the Delaware River above Philadelphia to 40 ft. His Delaware River decision was all the stronger because, following intensive restudy of the project, it overturned previous findings that were more palatable to powerful local interests.

Itschner's character and career make it evident that he will follow no other course on moral and professional standards. It isn't necessary for him to pledge himself, as he does, to make the same principles prevail.

And he reports with pleasure that Secretary of the Army Wilber M. Brucker gave him unsolicited support along the same line by telling the newly sworn-in Chief to "keep out of politics."

I. Combat Strength

The uniformed Army Engineer, after all, is a soldier first—whose first assignment is fighting. Every Army Engineer knows why the Corps exists, why its beginnings lay in the American Revolution itself.

But often, the man in the street is likely to forget that primary job, particularly in long periods of relative peace.

The big budgets for civil works, the publicized programs for military housing that have little of the olive drab in their design and construction and the dramatic sights that dams and flood-control projects offer the citizen in most parts of the country often leave the impression that the Corps is basically a civilian enterprise.

Itschner, however, makes the Corps' basic purpose amply clear both by his actions and his words.

As Engineer of the First Corps in Korea during the heaviest fighting there, Itschner has fresh and vivid memories of what combat means to the Army Engineers. Those recollections are backed by his World War II experience when he was in charge of heavy construction for the invading aries of Northern France.

Many of the top Corps officers today are the captains, majors and colonels of 1941 through 1945. In that period, the Engineers were often the first wave. They built island-hopping bases across the Atlantic and Pacific, constructed roads and bases in North Africa, the South Pacific and the continents of Europe and Asia, and literally supported the conquering armies right up to the last-ditch strongholds of the enemy on both sides of the world.

Itschner's first move after his Aug. 10 appointment was to make a month-long grobe-encircling tour of Engineer military operations overseas. On his return, he opened his ENR interview with this tone-setting remark:

"The primary function of the Corps of Engineers is to prepare for war."

The Engineers, he says, must be in a constant state of readiness. Civil works operations dovetail with this requirement, Itschner says, by providing an organization in being with capacity to take on its war load. But civil works are a means, not an end.

To carry out its multiple war tasks, which include troop training, combat, and supply, in addition to construction, the Engineers have to maintain their forces as a strongly integrated member of the Army. So the Corps has been working to increase its strength as the recognized combat-construction unit in the Army complex.

Progress has been made in recent years, and Itschner intends to keep pushing for greater improvement. Sturgis started by setting up a Deputy Chief of Engineers for Military Operations, a move that sat well with the Army. Also, he created a War Plans Section.

II. Civil Works

Cutbacks during Korea and the first year of the Eisenhower Administration sharply reduced the Corps' flood-control and navigation work.

When Sturgis took over, he told Congress in 1954 that money had been voted the previous year for only 82 projects, as contrasted with 285 in 1949.

He felt more new starts were needed to keep the Corps' civil works organization busy and to give the program better geographical balance. Too much of the appropriated money was going to big, continuing projects. The Corps wanted a large number of smaller jobs.

Congress came through pretty well on new projects, year after year. For the current fiscal year, the last Congress voted money for 114 new starts and resumptions, out of a total of 235 projects that received funds. The total appropriated is also the second largest amount on record, exceeded only by the $640 million approved in 1949 for fiscal year 1950. Annual construction expenditures dropped to a low of $400 million in fiscal 1955.

With some $80 million in unobligated carryover funds, the Corps has a good round sum of more than $700 million to put out for civil works in the next year. The total comes close to the $750-million goal set up a few years ago after the new Administration had discarded the ideal of a ceiling for resources development.

Restrictions on new starts in 1953 and 1954 reduced the backlog of uncompleted work on flood control and

navigation projects by about $1.3 billion. Since then, new project approvals promise to build up the backlog to over $4 billion.

This program and a military construction load that promises to stay heavy for the next 24 months lead Itschner to say that he sees no prospect immediately for any further consolidation of the Corps' division and district offices. The organization will continue for the present to operate 11 divisions and 43 district offices.

But, if economies can be gained as the military load decreases, Itschner very likely will consolidate field units just as Sturgis did when the emergency program of 1950-53 approached completion.

III. Military Construction

The Corps' workload of military construction this year is about $1.4 billion.

Since Korea the Army Engineers have placed $10 billion of military works under contract—nearly $8.4 billion under direct responsibility of the Chief of Engineers and the remainder under his supervision for overseas commands in Western Europe and the Far East.

Most of this military construction is for the Air Force. Relations with the Air Force, somewhat strained four years ago, have improved greatly.

No longer does the Air Force nurse the idea of having an engineer corps of its own to handle construction of its facilities.

Top civilian officials and generals of the Air Force state that they are satisfied to have the Army Engineers and the Bureau of Yards and Docks handle their construction for them. There is no thought today of reopening the vexing question of a separate engineering-construction group.

Itschner understands the requirements and problems of Air Force construction. In the early part of World War II, when Air Force construction was at its height, he was in charge of this program for the Chief of Engineers. That experience fits him to carry out his purpose of making Engineer-Air Force teamwork even smoother than it is today.

Settlement of the wrangle over special-category aviation engineers—Army troops attached to the Air Force—helped to bring the two services into closer harmony. The Defense Department ended the long-standing argument a year ago by returning the Engineer-trained construction battalions to Army command.

The solution saves the Defense Department some $40 million a year over the former unsatisfactory arrangement—or something like $100 million if the Air Force had succeeded in

Itschner, now sworn in to command the Corps . . .

taking over the Army Engineer troops completely as it wished. But Itschner and Sturgis regard the decision as much more important for another reason: It removes the threat of competition in war between two construction forces, with Army Engineers responsible for general construction and independent aviation engineers for airfields.

IV. Water Policy Attitude

Itschner has contributed to improved relations in other directions—with Congress, the White House, the Hoover Commission and departments like Interior and Agriculture that are deeply involved in resources development. As Assistant Chief of Engineers for Civil Works during the last two years, Itschner occupied a key position in furthering Sturgis' concept of better team play.

The report of Eisenhower's Cabinet Committee on Water Resources Policy shows how well this cooperative attitude of honest give-and-take, has succeeded. Speaking for the Corps, Itschner is able to say that he favors all the recommendations of the committee, with one or two exceptions that he regards as minor.

A uniform national water policy is something the Engineers want, Itschner points out, and he looks on the committee document as "a fine piece of work" aimed toward that objective. Specifically, he endorses the proposal for a Coordinator of Water Resources, legally established in the Office of the President. That setup, he explains, would accomplish more than the looser and slower cooperation now achieved through the Interagency Committee.

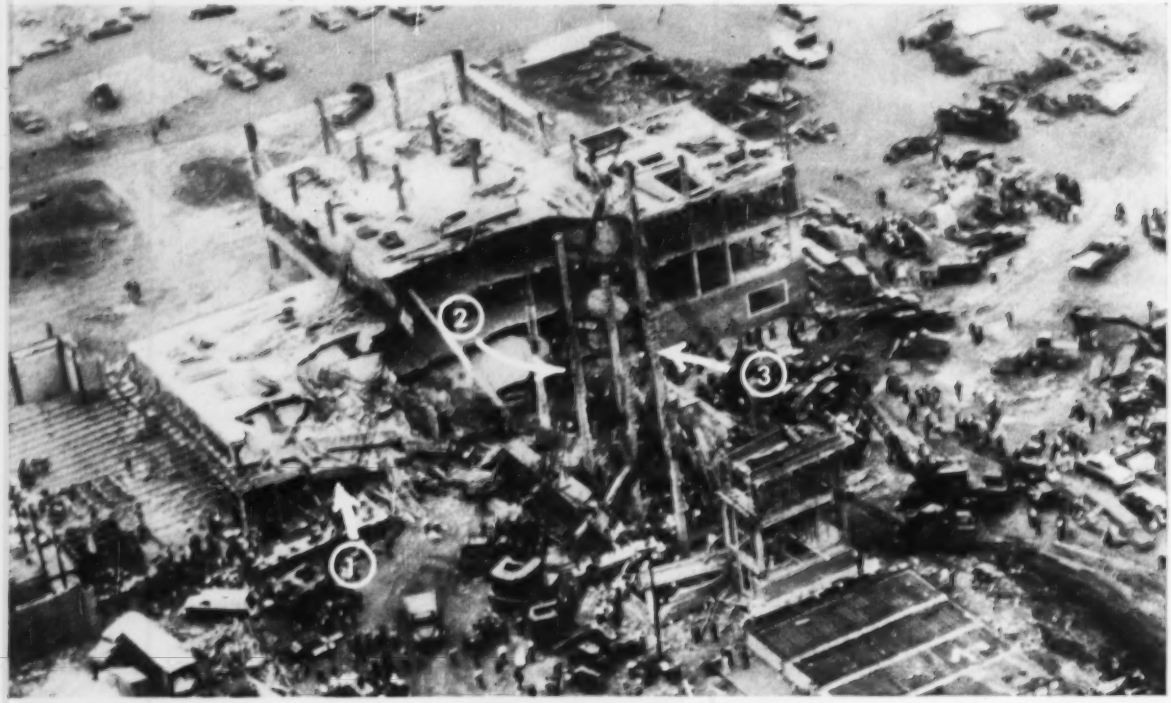
Tells how he sizes up the job ahead of him.

More surprisingly, Itschner makes no objection to the proposed Independent Board of Review that would analyze the economic and engineering feasibility of projects for the coordinator and the President. He feels strongly that all project reports should be reviewed by an independent board as is done in the Corps by the Board of Engineers for Rivers and Harbors. This board should continue to function, the new Chief believes, and it could continue under the water policy recommendations. That being so, he sees nothing objectionable in an independent board for the President, even though there may seem to be some duplication.

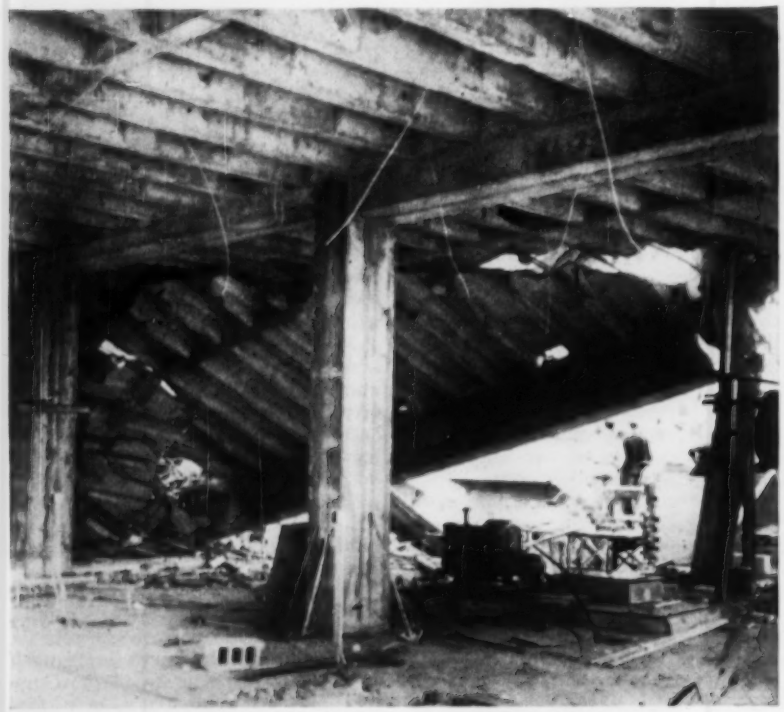
These fresh views can be attributed in large part to the close study of long-range Corps planning that has been going on since 1953. Sturgis set up a Policy Planning Section in the Chief's office to generate new ideas and analyze their long-range impact. Itschner will rely on this group, "divorced from the day-to-day crises" that beset Corps headquarters, to supply him with forward-looking ideas and policy ideas, every bit as much as Sturgis did.

In the long view, nothing has contributed more to the prestige and confidence of today's Corps than the verdict of the Second Hoover Commission. That victory was won on the basis of the high morale and high morale of the Army Engineers as a civil works construction organization. It was this record of the Corps, superior to that of other agencies, which decided the case for the commissioners. The almost impregnable partnership of Congress and the Corps was much less influential in persuading them to let the Engineers handle the nation's flood-control and navigation projects.

Flat Slab Breaks From Columns in Building



Without warning, 10,400 sq ft of a concrete building was reduced to rubble.



1. ADJOINING WING of beam and slab construction was damaged where it abutted the east wing, which collapsed while under construction.

2. COLUMN still stands, whereas floors piled up in the basement.

Failure

The sudden collapse of a wing of a four-story concrete office building under construction in Jackson, Mich., last week, has triggered several investigations. At least ten men were killed in the failure.

What caused the 18 days of flat-plate construction to plummet into the basement? What was the hidden factor that caused the catastrophe? Was it in design, materials, construction, or some human factor yet to be determined?

A lot of people closely connected with the project would like to know the answers. These include Consumers Power Co., Jackson, the owner; Black & Black, Lansing, the architects; Ray W. Covey, consulting engineer, Detroit, the structural designer; Herlihy Mid-Continent Co., Chicago, the general contractor; as well as insurance companies and state agencies.

Official reports explaining the failure probably will not be forthcoming for some time. However, examination of the reinforced concrete columns still standing suggests that the collapse could have resulted from punching shear of the slabs at the columns. In any event, no evidence remained of any special details that could have prevented this type of failure.

3. NECKED-DOWN areas on columns indicate former slab locations.

Falsework failure or foundation settlement appears to be a less probable cause, because of the type of construction and the nature of the collapse.

The building is approximately cross-shaped in plan, with maximum dimensions of 254x217 ft. At 1:45 p.m. on Oct. 3, almost all of its east wing gave way a few minutes after concrete was placed in the forms for the fourth floor from a bucket hoisted by a crane. At the time of the collapse, according to reports, there were no extraneous loads or unusual vibration or impact loads or concrete being placed.

Without warning, a section—three bays wide by roughly six bays long and covering an area about 72x144 ft—dropped into the basement. Down with the 2,600 tons of concrete came many of the workmen.

About 130 men had been on and around the job at the time. There were many miraculous escapes. For example, two cement finishers rode the collapsing floors to the basement and lived to tell about it.

It was all over in a few seconds, according to one competent observer. When the debris-laden dust had cleared away, the reinforced concrete columns were found still standing or leaning against each other, while the floor slabs, torn loose from them, lay broken and torn in the basement.

About 14 bays of the north and west wings were left standing. These areas apparently suffered little damage, except where they abutted the collapsed section. Similarly, no damage was noticeable in the two-story south wing and its one-story annex.

The flat-plate reinforced concrete floors were 10 in. thick. They were supported on square columns spaced 24 ft c-c in the east-west and north-south directions. There were no column capitals or drop panels. The columns, in turn, were supported on 10-in. dia concrete-filled pipe piles driven to bedrock 40 ft below grade.

Typical columns are 25 in. square between the first floor and the basement, 23 in. square between the first and second floors and 20 in. square between the second and fourth floors. The floors were cast integral with the columns. However, there were 10x14-in. openings for ducts and piping along two sides of some interior columns, which reduced the area available for reducing punching shear.

The columns were reinforced with eleven vertical No. 11 bars and a No. 5 bar spiral with 2-in. pitch.

The design called for placing of these square tie bars in a horizontal plane concentrically around each interior column. The innermost tie bar, placed 4½ in. below the top of the slab, is a No. 5 reinforcing rod forming a 42-in. square. Welded to it at regular intervals are eight 12-in. long bars in the shape of an inverted V, laid at an angle of 45 deg with the horizontal and with the apex pointed upward and toward the column.

The other two tie bars, placed 3 in. below the top of the slab, are 56 and 73 in. square, respectively, and made of No. 3 bars. They have 12 and 16 of the V-bars, respectively, welded to them.

Photographs show a few reinforcing bars still protruding from the columns. Those bars may have been some of the top reinforcing steel for the floors.

Forms for the flat-plate floors were made of pressed wood. The sheets were supported on 2x4s laid flat and spaced about 8 in. c-c. These joists rested on 2x12-in. stringers, which in turn were carried on 4x4-in. adjustable timber shores. The stringers extended across the shores in a lapped joint and were held in place by vertical cleats nailed to the shores.

Concrete in floors was specified to have a minimum compressive strength of 3,000 psi at 28 days. The first and second floors had cured for several weeks and the forms and shores had been removed. The third-floor concrete was a minimum of 20 days old. The forms had been stripped, but the floor had been re-shored.

Falsework Failure Injures Eleven Men

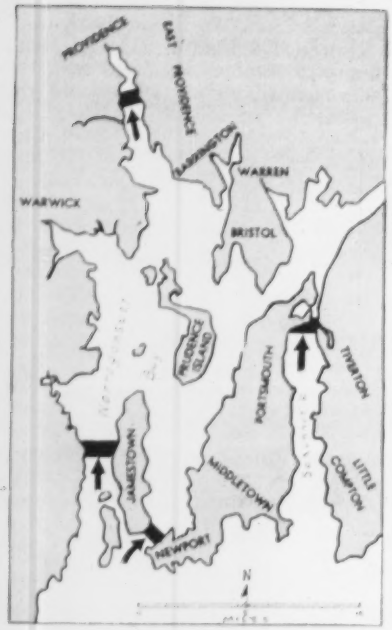
Eleven men were injured when a 20x30 ft bay in a 5-story reinforced concrete parking garage under construction in Jackson, Miss., dropped to the ground Oct. 3.

The area that collapsed was located at the junction of the second floor and a ramp to the basement. Concrete had just been placed on metal pan forms and was being vibrated when the mishap occurred.

The forms were supported on 16 screw-jack pipe struts on top of which were 4x6-in. timbers, set with the 6-in. face vertical. Extending to basement level, the pipe shores were 30 ft. long. They were braced by horizontal members at midheight, 15 ft. above the basement floor.

U. J. Little, director of the Jackson Building Department, believes that the collapse was triggered by the action of equipment placing and vibrating the concrete, which kicked out the 4x6s. He says that lack of diagonal bracing also was a contributing factor.

The garage was being constructed by Southeastern Construction Co., Charlotte, N. C. James T. Canzaro, and Oberstreet, Ware & Ware, Jackson, Miss., were architects and engineers. Post & Witty, Jackson, were the structural engineers.



Hurricane Barriers

Four are planned to stop flooding of Rhode Island

Proposals on how to protect Providence and much of Rhode Island from hurricane tidal flooding were introduced last week by the Corps of Engineers in a series of public hearings in Providence, Newport, and Fall River, Mass.

The proposed system included four earth and rock filled barriers costing a minimum of $80 million, all in Narragansett Bay.

Details of the program, released by Governor Dennis J. Roberts' Hurricane Survey Advisory Committee, were confirmed by Herman J. Kropper, chief of the engineering section of the Army Engineers' New England Division office in Boston.

The recommended two-state project would include:

- Construction of a $15-million dam across the Providence River at Fox Point to protect downtown Providence from Hurricane floods similar to those which swamped it in 1938 and 1954.
- A $65-million system of three massive rock barriers in the lower bay across the East and West Passages and across the Sakonnet River northeast of Newport.

The lower bay barrier system could cost as much as $100 million depending on how large the navigation channels are in each barrier and whether the barriers are gated or ungated.

Because the proposed barriers also would protect Mount Hope Bay and adjoining Massachusetts communities, Governor Roberts said he will ask Governor Christian J. Herter of Massachusetts to join him in asking for federal financing of the barriers.

Henry Ise, chairman of the Hurricane Survey Committee, said he expected a bill will be presented to Congress which will request the federal government to provide up to 90% of the construction cost, the same financing formula which now is used in some river and harbor improvement work.

The Army Engineers reached their conclusions about the barrier locations after studying work which included a field survey team in Rhode Island and construction of a 150-ft-long concrete model of the bay at the Engineers' Waterways Experiment Station in Vicksburg, Miss.

By reproducing in exact scale the hurricane winds and tidal surges which churned through the bay, the Engineers were able to forecast from the model which barrier placement would give maximum protection.

The Engineers also had to ascertain the effects the lower bay barriers would have on fish and wildlife, on pollution, on navigation and on certain shorefront properties.

The advantages to Providence of a dam at Fox Point, about a mile south of the city's center, would be twofold:

It could be engineered and constructed much faster than the lower bay barriers and therefore would give more immediate protection to the city, where the highest dollar value of damage occurred in both the 1938 and 1954 hurricanes.

Second, after the lower bay barriers were built, the Fox Point Dam would provide a secondary defense against wind surges built up in the 30-mi-long bay while the lower barriers would give primary protection against ocean tides.

The $15-million price tag on the Fox Point Dam would cover an earth and rock-fill barrier with sluice gates for normal river and tidal flow, and a pumping station to lift Providence River water over the dam when the sluice gates were shut in the face of a hurricane threat.

Provision also would be made for the Narragansett Electric Co., chief power supplier in Rhode Island, to get water from south of the dam for cooling in its power generating operations. The power plant is located north of the proposed dam.

The proposed barrier across the West passage would run from Saunderstown to the Island of Jamstown and would have a 400-ft-wide ungated navigation opening.

The East Passage barrier would have a 1,000-ft-wide ungated opening, according to Army Engineer recommendations. However, the U. S. Navy, mindful of its important Newport installations, wants a 1,500-ft-wide gated opening which would boost the construction cost considerably.

Another barrier across the Sakonnet River would have a 100-ft-wide gated opening.

Although construction details of the proposed barriers are a long way from the drawing boards, it is estimated that they would be about 20 ft above mean high water. The depth of the lower bay varies from about 40 to 65 ft.

Under optimum conditions, it is expected that the proposals could be translated into "project status" by early 1957 and the barriers constructed perhaps within three years from that date.

Much of the timing of course depends on how rapidly Congressional approval can be obtained for the projects and how much of the bill the federal government is willing to pay.

Dam Controversy

Utilities argue feasibility of proposed federal dam

A proposed $45-million federal dam and power plant on the Rappahannock River in Virginia was challenged and defended last week in a public hearing in Washington, D. C.

During six hours of testimony before the Board of Engineers for Rivers and Harbors, friends and opponents of the Salem Church project presented conflicting views on an enlarged plan for development of the site.

R. M. Hutcheson, system manager for power of the Virginia Power and Light Co., gave the board an analysis of benefits and costs that cast doubt on the economic feasibility of the flood control and power proposal.

Before the board are reports by the district and division offices of the Corps of Engineers that agree that the project would be feasible based on a benefit-cost ratio of 1.11. Re-evaluation by Hutcheson, however, results in an unfavorable ratio of 0.873.

The Salem Church project has been subject to sharp controversy in Virginia ever since it came before Congress at the end of World War II. Originally proposed by the Corps of Engineers for construction of a dam with maximum power pool at el 240, Congress finally compromised on el 220 after valley residents had protested against the flooding of rich bottom land by the proposed reservoir. It is planned as a concrete gravity structure 212 ft high and 1,500 ft long, with earth embankment otherside.

Hutcheson also pointed out in his argument against the project that water releases required for pollution control would further impair the power revenues necessary.

Russia's Georgi Malenkov tells McGraw-Hill's Shelton Fisher of:

The Soviet's Big and Bold Power Plans

Exciting and ambitious Russian efforts in power production and transmission have been revealed to the first American allowed to make an extensive tour of Soviet power facilities in recent years.

The visitor was Shelton Fisher, Publisher of McGraw-Hill's POWER magazine, who spent two weeks in Russia, visiting three major power plants, talking to the country's leading power experts, and interrogating ex-Premier Georgi Malenkov, now director of the Ministry of Power, in a three-hour interview.

Malenkov spoke assuredly of an intercontinental power grid, transmitting at 400 kv, linking water resources-rich Siberia with the Central Europe power center—the Moscow area—by 1960. The grid is to be fed from central station steam plants of up to 1.5-million kw capacity; from hydro stations, the most impressive of which will be Bratsk in Siberia with record-size 200,000-kw generators and a total capability of 3.6 million kw; and finally from 2.5 million kw of nuclear power plants.

Malenkov added that the two-hour time difference between east and west makes it possible to build plants of smaller capacity since power can be shifted as the sun moves and the demand changes.

Bratsk Dam in Siberia is already under construction and is expected to be producing power by 1960. Located on the Angara River, the dam will be three miles across and 425 ft high. Yearly production at Bratsk is expected to total 20 billion kwh. Total hydro power consumed in Russia in 1955 was 28 billion kwh.

Fisher on Malenkov

"Not once during my three-hour interview did Malenkov pass a question to his subordinates, only once did he refer to notes. He talked smoothly, smiled and laughed freely, the entire interview was remarkably relaxed.

"As last spring's news stories indicated, Georgi Malenkov was a hit on his visit to England. It is easy to see why. He is affable, is probably the most Western, in manner and thinking, of the men now comprising the Presidium.

"Malenkov is a graduate of the Electrical Engineering Institute. During the war, he was responsible for the large-scale transfer of Soviet industry from central Russia to points behind the Ural Mountains. Today, he runs the Soviet atomic program, in addition to conventional power stations.

"He is probably No. 3 or No. 4 man in Russia today, has not slipped far from his previous spot as Premier. In Moscow it is not thought impossible that Malenkov might again rise to the top. It is pointed out that Khrushchev is 62, Bulganin 61, Malenkov only 55."

Malenkov told Fisher that the existing hydro installations represent only 2% of the potential development and that ultimately hydro sources will generate 1,700 billion kwh annually. This, incidentally, is 500 billion kwh more than the total electrical energy consumed by the entire world from all sources in 1953.

During his interview with Malenkov, Fisher asked about production of electricity from nuclear sources.

Here are some of the high points of that conversation:

Fisher: In Stalingrad about a month ago Mr. Khrushchev said that today the United States is the richest country in the world. But that tomorrow the USSR will be. And that you will do it with fast development of atomic power. Can you comment?

Malenkov: **He was talking about all the areas we have discussed today, not just atomic energy.**

Fisher: But you do have an atomic energy program for power generation?

Malenkov: **By 1960 we expect to be generating 2½ million kw from our nuclear plants.**

Fisher: How many plants?

Malenkov: **There will be eight plants, their capacity will range from**

By 1960 huge transmission grid will link east and west Russia . . .

300,000 to 600,000 kw. The first plant we will build will be only 200,000 kw.

Fisher: Will they all employ the same type of reactor?

Malenkov: **No, each will be a different type of reactor.**

Fisher: Eight different types of reactors?

Malenkov: **Yes, each will be different, maybe only slightly, but we will test these different types and then go ahead with the best one.**

Fisher: This 2½ million kw will be expensive power.

Malenkov: **Oh, we admit the construction cost is high, but we're willing to spend extra because of the future.**

Fisher: How much are you willing to spend now? Two, three, or four times as much as the conventional units?

Malenkov: **Well the cost is not even twice now, but we're willing to subsidize the program.**

Fisher: Are you going to build these eight plants at accessible sites where study and testing can be easily carried on? Or are you going to locate them where coal and hydro potential does not exist at the present time?

Malenkov: **You have guessed it. We will locate them where other fuel is not available. Although they are experimental, to pick the right type of reactor, they are serious generating plants. We regard this as a technically solved problem. We have technically sound decisions for all eight of these nuclear plants.**

Fisher: You have a reactor already generating power here in Moscow. Are you satisfied with it?

Malenkov: **Near Moscow . . . oh, it is a very small thing.**

Fisher: About 7,500 kw?

Malenkov: **No, no, only 5,000.**

Fisher: It is not on my program . . . .

Malenkov: **This is now under reconstruction for about two months. It is torn apart for these two months. In the next month it will be working again.**

Though many of Russia's power plans appear highly optimistic, actual achievements have been impressive. At the end of World War II, total electric energy production was 43 billion kwh annually. By 1955 it had been increased to 170 billion kwh.

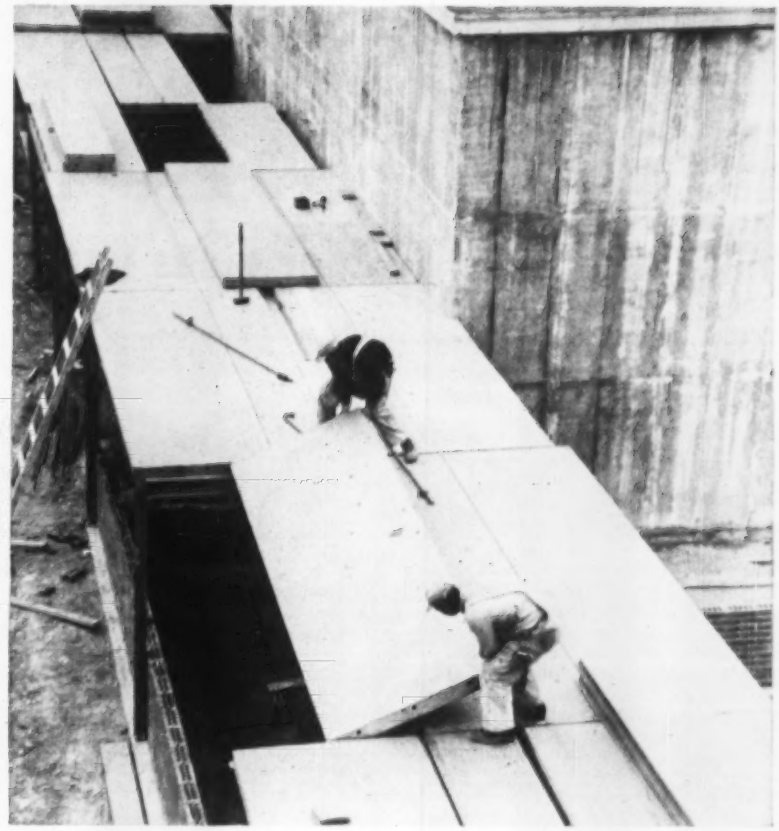
Technical achievement can be measured in terms of two of the world's largest hydro stations—at Kuibyshev and Stalingrad on the Volga River, capable of 2.1 million kw and 2.3 million kw, respectively. In thermal generation, the Russians have an 800,000-kw central station. Cherepets, one of the newest steam plants, has two 150,000-kw units now utilizing steam at 2,550 psi and 1,022 F. It is soon to be boosted to 1 million kw with steam at 2,700 psi and 1,060 F. Soviet engineers have a test boiler operating at 4,400 psi. (Two U. S. plants are under construction that will generate steam at 5,000 psi and 1,150 F.)

Cherepets is built on what the Russians term the "block" system (unit system to U. S.). At the plant, a "block" consists of two 530,000-lb-per-hr boilers and one 150,000-kw turbine-generator. The boilers are of standardized design, natural circulation, drum type, with radiant and convection superheaters. A reheat section raises steam temperatures from about 650 F to 975 F. Both air heaters and economizers are tubular.

The brown coal burned is pulverized by two ball mills per boiler, which supply slotted, revolving burners. Combustion is controlled by an electronic system. Stack emission is controlled by electrostatic precipitators.

Of the 170 billion kwh of electrical energy produced in 1955, 28 billion kwh or 17% came from hydro stations (compared to 23% in the U. S. and around 35% in Central European countries). But while hydro's share is going down in many larger nations, hydro in Russia will capture an increasing percentage of the production. About 80% of Russia's thermal plants burn coal, with peat, fuel oil and natural gas serving the remaining stations.

Summing up the Russian power picture, Fisher concluded that the Soviets know their business. He thought both the U. S. and the Soviet Union could profit from a freer exchange of information.



Plywood Panels Have Builtin Framing

Stressed-skin panels built with fir plywood glued to framing members are being used in several building projects in the Pacific Northwest. The panels span up to 20 ft without conventional framing.

In effect, the panels act as shallow box girders, the plywood serving as top and bottom flanges.

Peter Bilder, Lynwood, Wash., supplied the more than 14,000 sq ft of fir plywood panels used for a breezeway roof over walks between new school buildings in Puyallup, Wash. On this job, panels, 4¾ in. thick, and 2 or 4 ft wide, rest on steel framing members spaced 16 ft c-c. The underside is ⅜-in. fir plywood and the top is ¼-in. exterior-grade fir plywood glued to 2x4 framing members, 16 in. c-c.

A tongue-and-groove effect was achieved by a slight shifting of the top layer. The panels are ventilated by holes which has been drilled into the end framing.

When employed on a series of houses with 2,200 sq ft of roof surface, says Bilder, three men laid the entire roof in eight hours on the first try. The best subsequent time, that was recorded by the men on a similar unit, was three hours.

The panels also were used for walls, floor and roof in a clinic at Tacoma, Wash. Concrete footings, 14 ft c-c, support the floor panels without additional framing, in most instances. The exterior walls are framed between 4x4 posts, 4 ft c-c, and 4x6 beams. The ⅜-in. thick outer plywood is covered with cedar siding. Insulation was placed inside the panels in the shop.

A reflective aluminum sheet was applied to the underside of the top plywood in ceiling panels.

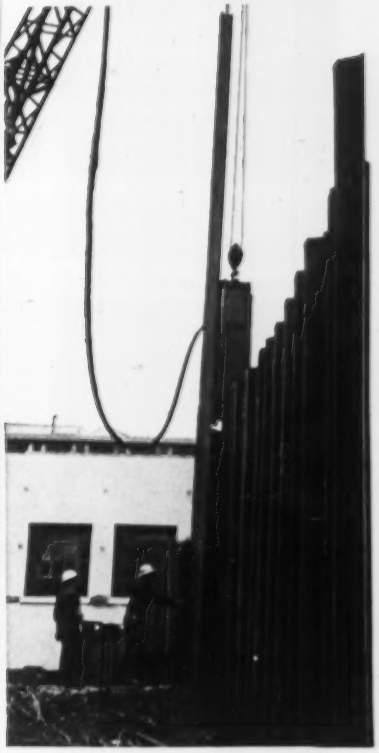
The roof is supported on the top beams and on gluelam beams on longer spans. Roof panels, generally spanning 16 ft, have a ¼-in. top and a ¼-in. underside that is used to form the ceiling.

Here, too, plywood surfaces off center form tongue-and-groove joints. Extra space was allowed in the grooves to provide wiring chases and to permit slight variations in placement of supporting members. The edges of the plywood, however, are designed to butt solidly in all cases.

Architect for the Tacoma clinic was Lea, Pearson & Richards, and for the Puyallup school, Robert Billsbrough Price. Contractor for the clinic was Korsmo Brothers; for the school, Ostruske-Murphy, Inc. All are Tacoma firms.

At 3 P.M....

CAVE-IN!



Cave-ins will happen, through no fault of the contractor. On this excavation job, there was erratic soil behavior, shifting loads, saturating rain . . . everything unpredictable.

When it happened, L. B. Foster Co. was called at 3 P.M. for rental steel-sheet piling *in a rush*. We cut MP-116 piling in our yard, and delivered it in Foster trucks to the job site 400 miles away before the crews started work next morning.

This is typical of the dependable help contractors can expect . . . and get . . . with Foster's Piling Rental Plan. Always the exact length and exact section . . . when you need it . . . on low fixed cost. Call your nearest Foster office for quotations—find out for yourself the real savings in Renting Piling from Foster.

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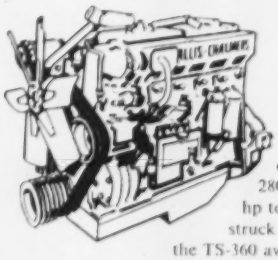
ATLANTA 8 • HOUSTON 2 • LOS ANGELES 5

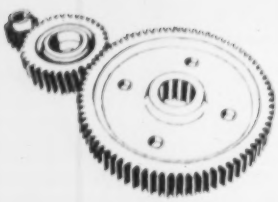
Look at the
EXTRA WORK OUTPUT
the Allis-Chalmers TS-360 Motor Scraper gives you

Here are some of the design features that put the TS-360 way out in front in steady performance, dependability and length of service life.

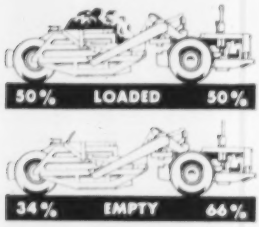


MORE USABLE HORSEPOWER. A heavy-duty Allis-Chalmers diesel engine delivers 280 hp to provide 18.66 hp to move each yard of struck dirt. This power gets the TS-360 away from the pusher fast . . . gives you speedier cycles, more trips per hour. In this engine, combustion timing and pressures are controlled for high efficiency. Air and fuel are mixed thoroughly for more complete burning. Follow-through combustion holds effective working pressures to take advantage of better crankshaft leverage.

BIG-CAPACITY CLUTCH AND TRANSMISSION give fast, smooth operation under all job conditions. Clutch has air-actuated booster to reduce clutching effort and increase shifting efficiency. The heavy-duty transmission gives unmatched torque output in each gear range.

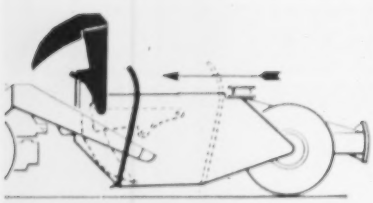


EXTRA-HEAVY FINAL DRIVES feature rugged differential assembly, carrier-housed drive shafts, final drive gears supported by large roller bearings and heat-treated drive axles. This long-life power train transmits maximum engine output for extra work volume, extra profit.

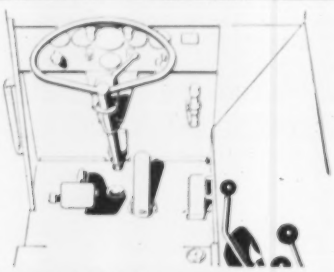


EXTRA TRACTION. The TS-360 motor scraper provides greater tractive effort, loading or traveling. Two-thirds of the empty weight is carried on drive wheels. Loaded weight is distributed equally between tractor and scraper wheels for better balance, increased flotation, safer hauling.

EASY-LOADING BOWL. Wide, low bowl design with curved bottom and offset cutting edge assures full capacity loads in less time. Curved bowl bottom "boils" dirt in, filling corners, heaping load with less spillage.



CONTROLLED DUMPING ACTION. Forward movement of ejector forces out load. High apron lift prevents material from jamming. This combination provides a continuous flow of material for a smooth, even spread.



POSITIVE STEERING. Two-stage selective power steering makes the operator's job easy . . . provides safe, feather-touch response and full maneuverability whether traveling at high speeds or in cut or fill.

OPERATOR CONVENIENCES add to production, too. Easy-to-reach controls, full visibility, four-wheel air brakes, roomy platform, comfortable air-foam seat are some of the features that help operator get maximum output from the TS-360.

More and more TS-360's are coming into your area every day. Ask your Allis-Chalmers construction machinery dealer where you can see them in action. Remember, too — your Allis-Chalmers dealer stocks True Original Parts and offers factory-approved service methods and factory-trained servicemen for your convenience.

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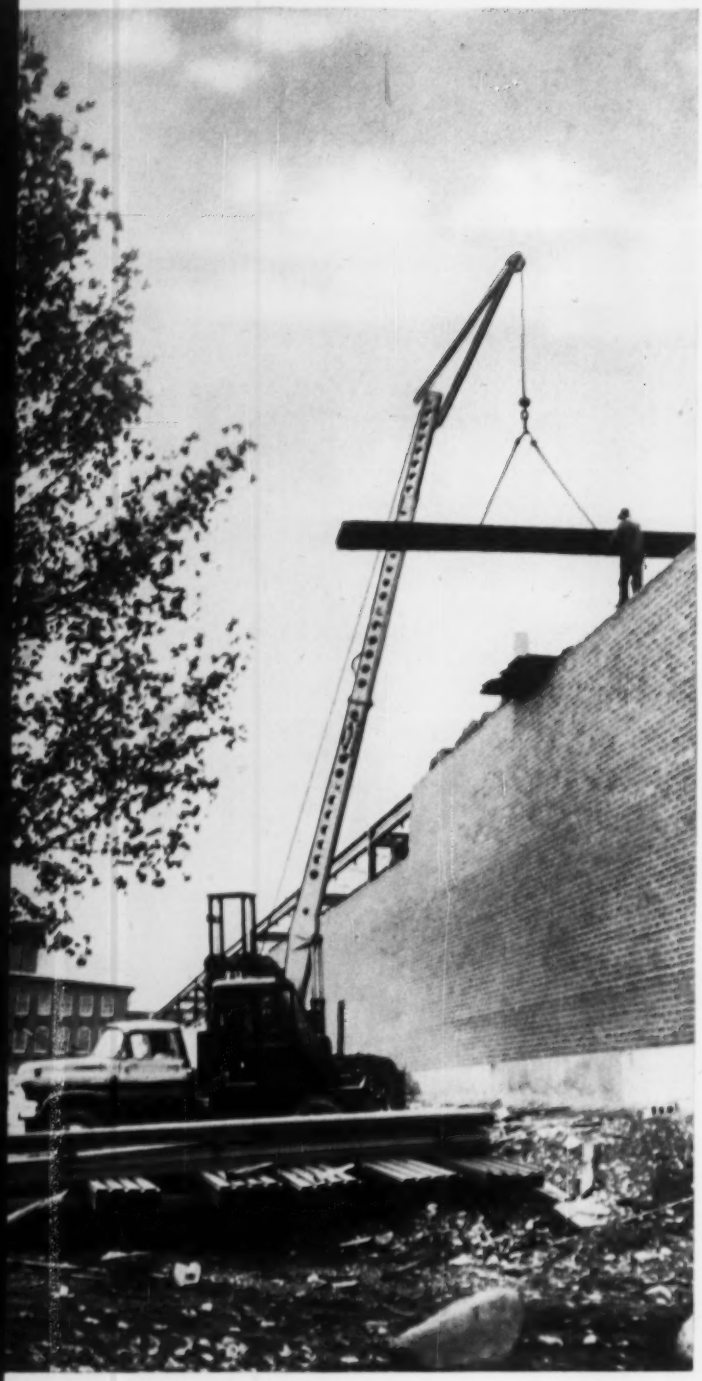
ALLIS-CHALMERS

Bucyrus-Erie Announces New 5-Ton Model H-3 Hydrocrane 10,000-lb. maximum capacity, 3/8-yd. clamshell



Bucyrus-Erie Hydrocranes have long been noted for big lifting capacity per pound of crane weight. Now the new Model H-3 Hydrocrane — mounted on a lightweight, low-cost truck — gives you 10,000-lb. maximum lifting capacity. And the new Model H-3 retains short tail swing characteristics that have made Hydrocranes standouts on close-quarter work.

In addition, this all-hydraulic, multi-job speedster has many more outstanding new features that put it even farther ahead of ordinary truck cranes.

NEW LOAD INDICATOR WEIGHS EACH LOAD YOU LIFT

A new outstanding safety feature is the load indicator and pressure gauge located at the operator's station. He knows at a glance if the load can be safely lifted at the required radius.

AUTOMATIC OUTRIGGER LEG LOCKS ELIMINATE DOWN DRIFT

Vertical outrigger legs have spring-actuated catches which operate automatically to eliminate outrigger down drift during travel. No chains or snap hooks are needed.

NEW HOUR METER CLOCKS ENGINE WORK HOURS

Better care results from the recording of actual hours of operation . . . makes it easy for the service man to follow recommended protective maintenance program.

NEW IMPROVED THROTTLE CONTROL FOR SMOOTHER OPERATION

Vibration-proof locking throttle control, conveniently located at operator's finger-tips, permits him to set and hold engine at desired speed.

NEW TRUCK BRAKE LOCK

"Mico" electric brake lock holds truck wheels firmly in place while the crane is working.

And this is just the beginning. The new H-3 Hydrocrane has dozens of other new features that will speed your jobs — help you make more money. Get in touch with your Bucyrus-Erie distributor for the full story. 115H56C

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Higher Salaries

Arizona, Seattle engineers get across-the-board raises

Across-the-board salary increases have been authorized for state highway engineers in Arizona, and for city engineers and superintendents in Seattle.

In Seattle general salary increases, up to $3,000 for department heads, are allocated in the 1957 budget for city engineers, superintendents and their department workers. Compensation for the city engineer has been increased by $3,000 to $15,000 annually, while water and building superintendents were granted similar raises to $13,000 and $12,000, respectively. Other workers in the organization will get increases upward from $5 a month.

Major exclusion in the Seattle boosts is Superintendent Paul J. Raver of City Light. He will continue to draw the top figure in the city payroll, $18,000.

Arizona, meanwhile, has authorized wholesale raises in its highway engineering department—$50 a month for engineers and $25 a month for engineering aids—to head off threatened demoralization of the division due to steady personnel losses.

So far this year Arizona has lost 38 engineering personnel—and has been able to replace only 12 of them says State Engineer William E. Willey: "The situation has become quite serious as the result of continued raiding of engineering division personnel by other states and private industry—both of which are offering salary scales substantially higher than those paid by the highway department."

Fate of Right-of-Way Law Up to Washington's Voters

On Nov. 6 voters of the State of Washington will decide the fate of a constitutional amendment that would enable the State Highway Department to take immediate possession of land needed for road construction, before final settlement with the property owner.

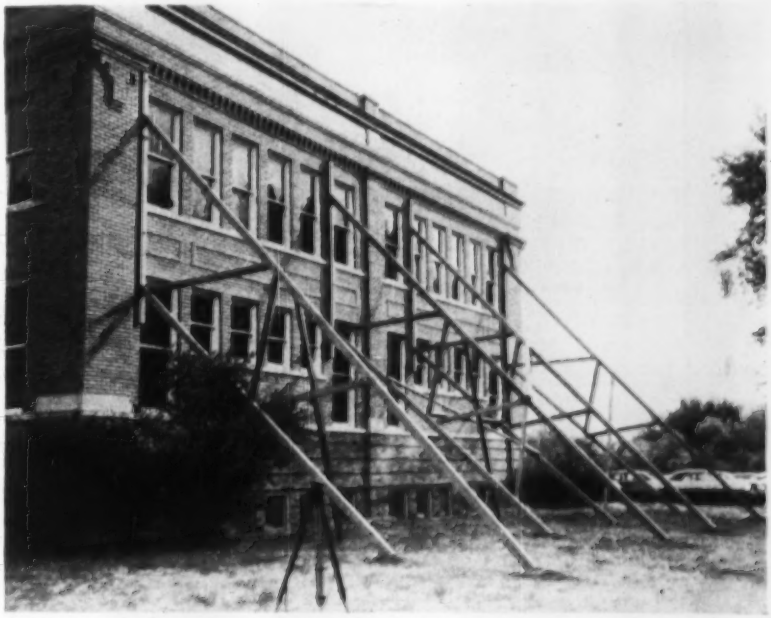
Under the amendment the state would pay into court an amount of money that would be held for the use of the property owner.

AISC, Colleges Will Sponsor Conferences on Plastic Design

Basic principles of plastic design in structural steel will be presented to engineers and architects in several sections of the county this fall in a series of one-day conferences. The meetings—sponsored by various colleges in cooperation with the American Institute of Steel Construction—will get under way this week in Pittsburgh, Cleveland and Ann Arbor, Mich.

Remaining sessions will be sponsored by the following universities: Virginia, Oct. 25; Colorado, Nov. 9; Southern California, Nov. 12; California, Nov. 14 and 15; Washington, Nov. 16; Oklahoma, Nov. 20; Texas, Dec. 3; Southern Methodist, Dec. 4-5; Houston, Dec. 7.

Program and registration information may be obtained from heads of civil engineering departments at the sponsoring colleges.



SHORED UP against threat of collapse, the high school in Elk Point, S. D., had to be evacuated when dried out soil shifted beneath it and caused the walls to crack.

Soil Settlement Imperils Buildings

Earth movements blamed on a drop in subsurface water level in Elk Point, S. D., have damaged buildings to the extent of $1 million and are believed to threaten all the larger buildings in the Missouri River town.

A buckling wall has forced evacuation of the high school. Cracks 4 to 8 in. wide have opened between the walls and floor of a church. A 3-story stone courthouse has shifted.

Cause of the earth movements, observed also in a 40-mi-long, 6-mi-wide area from Vermillion to Sioux Falls, generally is agreed to be soil dessication resulting from low water table. But the reason for the drop in subsurface water level is disputed.

Community leaders blame the Gavins Point and Fort Randall Dams, up the Missouri 40 and 75 miles, respectively, from Elk Point. They say that low river level since the dams were built (Fort Randall, ENR Mar. 18, 1954, p. 25—Gavins Point, ENR Dec. 30, 1954, p. 18), coupled with two consecutive dry years, has caused the ground to dry out and slip.

Agreeing that the drought was responsible but asserting that the dams had nothing to do with the shifting, Col. Thomas J. Haves, Omaha district engineer, Corps of Engineers, maintains that—if anything—the dams have tended to alleviate Elk Point's plight. They have stabilized river flow at a higher level than before they were built, he points out, and thereby discouraged the drainage of subsurface water into the river.

Col. Haves says that he based his analysis on general engineering knowledge. No conclusions have been announced by an engineer sent to the scene by the Omaha district nor by South Dakota's state geologist, E. P. Rothrock, who is making a survey.

According to Col. Haves, rainfall has been below normal every month for the last two years. The resulting lack of subsurface water, he says, has been aggravated by irrigation from wells in the vicinity.

A costly but quick solution for the foundation difficulties, according to a Sioux Falls architect called in as a consultant, would be to drive piles down to solid glacial till. This material underlies the affected area at depths said to be 90 ft and more. Alluvial strata above the till are composed of silt, clay and sand.

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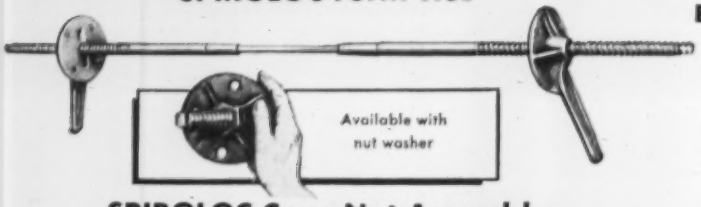

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This section of the Jersey City interceptor sewer, adjacent to turnpike approach to the Holland Tunnel was the scene of an unusual failure . . .

Hydrostatic Pressure Raised Sheeting

DISPLACEMENT OF SUBSTRATA is evidenced by the 2-ft-wide cracks that encompassed the collapse area. Earth within the cracks settled 1 to 2 ft.

OVERTURNED WALER and strut section show effects of unequal raising of opposing sheets. At either end, sheeting and trench bottom were undisturbed.

A 2¼-in. rain falling in 2½ hrs on September 6 is blamed for a 100-ft-long sheeting failure on a section of the Jersey City (N. J.) intercepter sewer now under construction near Mill Creek. The contractor, Garden State Constructors and Associates Inc., had already installed over ¾ of a mile of sheeting for the Jersey Ave. section of the sewer on which the failure occurred, and at no time has there been any indication that the method used was inadequate.

The sheeting is a DP-2 steel sheet section driven in 30 to 35 ft lengths. Since the 12-ft-wide excavation is only 20 ft deep, the sheets in the completed trench have a 10- to 15-ft toe. Five sets of 12 x 12 walers are used, and 12 x 12 struts are placed between each set of walers at 11-ft intervals. Alternate struts are doubled, and continuous 12 x 12 outside walers, held together by two or four strands of ¾-in. wire rope, are placed at the top of the sheets.

From the inception of the Jersey Ave. operation the trench bottom has been a plastic blue clay that reacts to pressure like marshmallow — push it down in one place, it comes up in another.

A difference in substrata was evidenced by the fact that piles driven within the cut increased in length from 35 to 90 ft as work progressed, but the longer lengths were not con-

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STRUTS AND WALERS were scattered like toy logs when the sheets were pushed up. Some of the cable ties snapped, but none of the timber bracing broke.

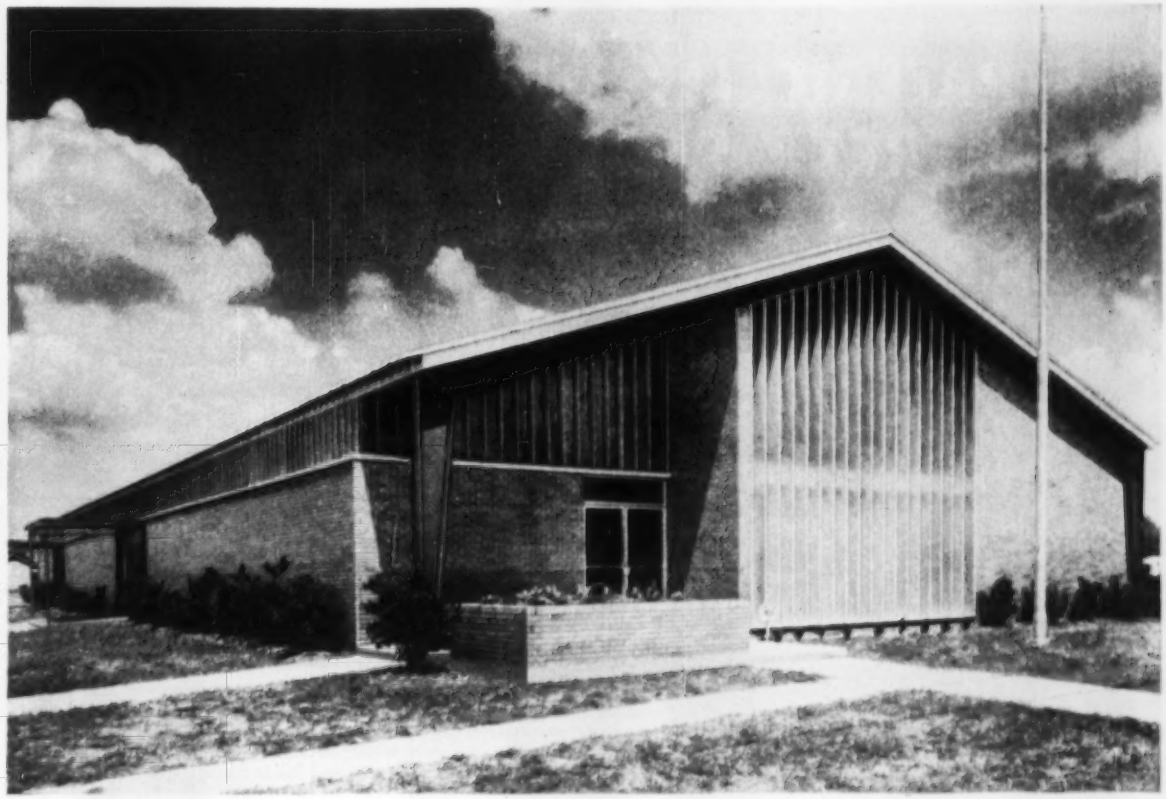
fined to the collapse area, and visible sections of the bottom were apparently no different from those previously worked on.

• **What happened**—Within hours after the rain, both sides of a 100-ft section of the sheeting started to rise. Two-foot wide cracks developed and, for a distance of 50 ft from the rising sheets, the ground settled as much as 2 ft. Sheets on the eastern side of the cut rose as much as 2 ft while those on the west came up 4 to 5 ft.

As the disparity between heights of opposite sheets increased, struts went more and more off level, until they were forced off the walers. Some of the ¾-in. cable ties between outside walers were snapped either by excessive pressures at the toe, or by the higher rise in the western sheets, or by both. The walls were forced inward until only the 1½ ft of clay forced up from the bottom kept them apart.

Weston Gavett, of Clyde Potts Associates, consulting engineer for the Jersey City Sewer Authority stated that he could find nothing wrong with methods used by the contractor. In his opinion, only filling the cut with water might possibly have prevented the accident. However, he added, the volume required, scarcity of water in the area (the contractor is doing relatively little pumping) and lack of warning of the storm made this course of action impossible.

Removal and reconstruction of the damaged section is now under way. According to Samuel Luciano, resident engineer for the contractor, the reconstructed walls will be basically the same as the originals except that 35 to 40-ft sheets will be used, and the outside waler will be replaced with a 6 x 6½-in. angle which will be welded at intervals to the inside top of the sheets.



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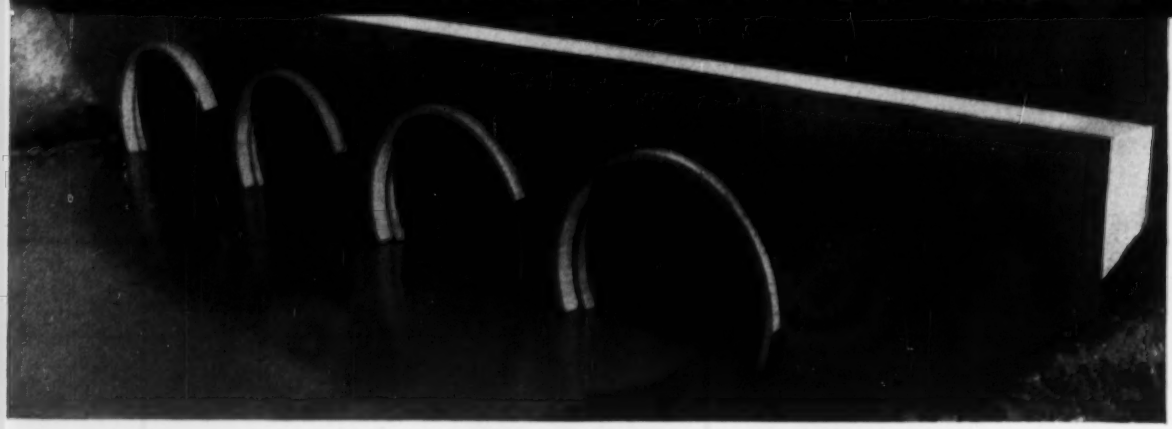

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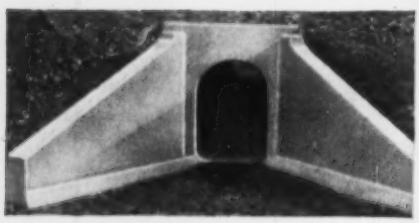

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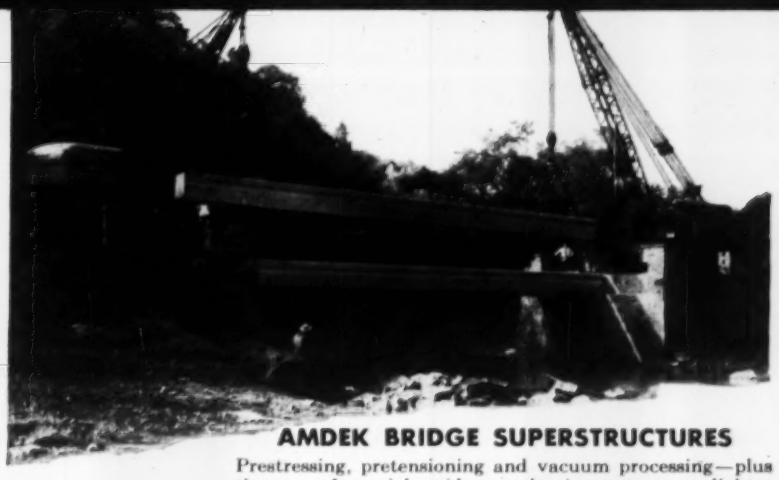

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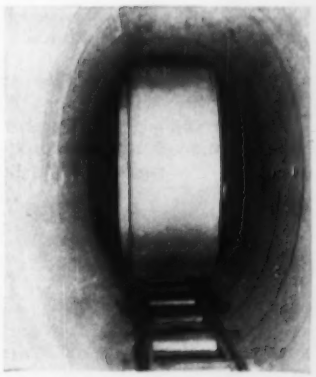

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Oahe's Slides Enlarge Earthmoving Job

A big job to start with, earthmovers now have to contend with 2 million cu yd of slide material, plus several more million necessary to stabilize the slide area

Earth slides are curious phenomena, wherever and whenever they occur. Unpredictable as to magnitude, direction and timing, they ordinarily pack considerable destructive power.

When a sizable slide occurs on a big earthmoving job, it can become a construction headache for both contractor and engineer. What caused it? How to correct it? What changes must be made in the design and construction to preclude additional slides?

These were some of the questions confronting the Army Engineers this spring, when a slide in the east abutment of Oahe Dam moved about 2 million cu yd of material riverward. A first-hand look at the area of disturbance (see photos) gives the impression that corrective measures won't be too difficult. However, several more million cubic yards of material will be removed in stabilizing the abutment.

• **Easy does it**—Furthermore, an on-the-spot interview with John W. Sibert, Jr., area engineer in charge of constructing the huge multiplepurpose Corps of Engineer dam and Carl (Rip) Collins, project manager for Western Contracting Corp., earthmoving contractors on the project, gives assurance that correcting the slide is being taken in stride, without seriously delaying the overall construction schedule.

Here's what happened and how it's being corrected. But first, a brief word about the size of the overall project:

• **Biggest dam**—Rated as the biggest of the main-stem dams on the Missouri River by almost any yardstick (ENR Mar. 15, 1951, p. 32) Oahe Dam will have a storage capacity of 23.6 million acre-ft of water for flood control, hydro-power and irrigation behind its 242-ft-high, 78-million-cu-yd rolled-fill embankment. It is located about six miles upstream from Pierre, S. D. Closure is scheduled for 1958, and first hydro-power generation in late 1961.

Although Oahe is an earth dam, over 1 million cu yd of concrete will go into its spillway, outlet works and power installation. Ultimately it will have an installed power generating capacity of 500,000 kw. Its outlet works will have a total discharge capacity of 103,000 cfs, while its gated, chute-type concrete spillway will be capable of handling a flow of 319,000 cfs.

• **Slide developed slowly**—The slide started to develop last November. Its movement was quite gradual. By June, it was estimated to have moved horizontally about 8 to 12 ft (ENR, June 14, p. 25), with vertical displacement ranging up to 30 ft.

The contractor started removing the slide on March 20, using draglines and working down from the top of the affected area. The entire slide is expected to be completely removed by the end of this construction season.

It is believed that the movements occurred along a combination of existing fault planes and bentonite seams; triggered perhaps by nearby excavation operations along the face of the abutment and aggravated by sub-surface water pressures.

• **Design changes**—Original design called for the exposed faces of the cast abutment—into which the rolled-

WORKING FROM THE TOP DOWN, dragline begins removing disturbed material from slide area on face of east abutment, which will be flattened to a 1 on 6 slope for greater stability.

fill embankment of the dam proper will be anchored–to be trimmed to slopes ranging from 1 on 3 to 1 on 5 (1 vertical to 5 horizontal).

Due to the slide, however, these surfaces will be laid back on flatter slopes for greater stability. In overburden material–which is a glacial till extending to depths as great as 80 ft below existing ground surface–the slope will be trimmed to 1 on 5. The underlying shale will be sloped to 1 on 6.

• **Slide dimensions**–It is difficult to estimate the area and dimensions of a slide, regardless of where you're standing. But as a rough estimate, the slide at Oahe appears to be a maximum of 2,500 ft wide, measured normal to the direction of movement, and perhaps 2,000 ft long parallel to this direction.

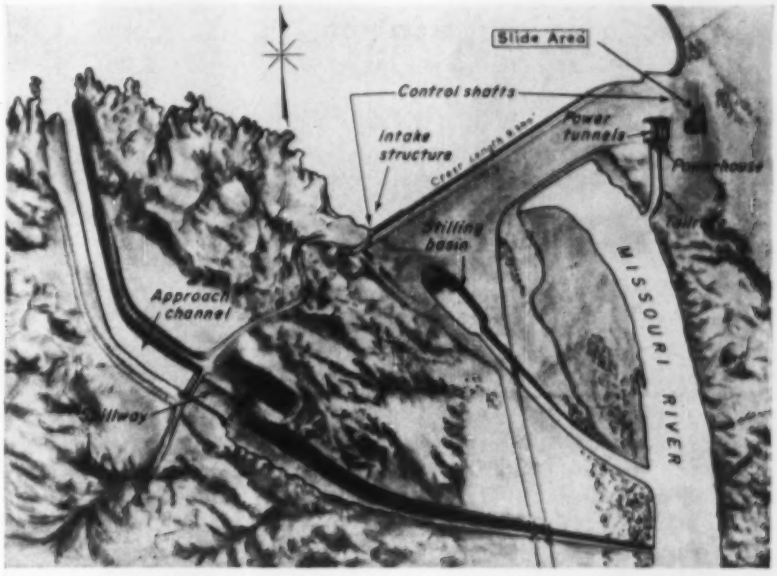
As the material fell away from the top of the previously trimmed face of the east abutment, it first moved down toward the river, then at an angle of about 30 deg with the axis of the dam. Near the toe of the slide the disturbed material narrowed to less than 100 yd in width.

• **No big surprise**–The slide came as no great surprise to the engineers or the contractor. In fact, the contract for Stage IV earthwork contains provisions for removing slides–although not on the order of magnitude of this one.

Consequently, the only contractural authorization needed to start removing the disturbed material was a negotiated unit price for the work. Actually this involves merely a modification of the excavation and embankment contract in Stage IV. Moreover, since the slide is almost entirely within the limits of Stage IV earthwork contract, it would have been highly impractical to award a contract on competitive bids for its removal.

The material in which the slide occurred is in what the geologists call the "Oacoma" zone of the Pierre Shale which underlies the glacial till in that area.

This zone is distinguished by a large number of bentonite seams. Since the bentonite becomes slippery when moist, it can contribute to the unbal-



AS SHOWN IN RELIEF, Oahe's multiple hydro-power tunnels and 500,000-kw powerhouse will be located on the east bank of the Missouri, the six regulating tunnels on the west bank, and the 319,000 cfs spillway farther inshore to the west.

LOOKING DOWNSTREAM from the damsite, undulating contours of the glacial-till overburden indicate that the underlying shale and bentonite have been shifting riverward for ages.

. . . It was a big job to start with

EARTHMOVING ON A GRAND SCALE, calls for big electric shovels with 11¼-yd dippers and fast-moving trucks sideboarded to hold 30 cu yd of pay dirt.

ancing of nature's forces that hold the river bluffs in balance.

• **Shifting bluffs**—Even without the shift of weight resulting from man's attempts to remodel the Missouri's banks and bluffs, the underlying shale strata have been shifting riverward for cons. Looking downstream from the present slide at Oahe Dam, it doesn't take much imagination to visualize this flow of earth and shale riverward, as evidenced by the undulating contours of the fingerlike formations jutting out toward the river.

The left bank of the Missouri River at Oahe is more susceptible to slides than the right bank, probably due to the orientation of existing fault planes caused by ancient movements.

• **Earthwork contracts**—As has been noted, the slide occurred generally within the limits of Stage IV earthwork—one of three excavating contracts held by Western Contracting Corp. totaling 19 million cu yd of excavation to be accomplished this year. Of this amount, about 11 million cu yd was in Stage IV, before the slide occurred. Stage V earthwork calls for 3 million cu yd of excavation this season; and Stage I spillway excavation, about 5 million cu yd.

The 14 million cu yd of excavation to be completed this year under contracts for Stages IV and V, is being placed in the main embankment of Oahe Dam and on up- and down-stream berms. Spillway excavation is being used in part to build channel banks and the remainder wasted.

Major hauling units include a 25-truck fleet of 50-ton, twin-engine rear-dump trucks used by Western Contracting Corp. in completing the closure of Fort Randall dam 200 miles downstream on the Missouri (ENR Aug. 14, 1952, p. 37). The contractor is also using about twenty 25-cu-yd bottom-dump trucks, sideboarded to hold 30 cu yd. To load these big earthmovers, there are two 11¼-cu-yd electric shovels and three draglines, with bucket sizes of 6 to 11¼ cu yd.

This gives the contractor five earthmoving spreads for feeding material to the main embankment where it is sprinkled, processed and compacted by sheepsfoot rollers and huge pneumatic-tired compactors.

During the first part of this summer the contractor averaged about 75,000 cu yd of excavation per day, working two 10-hr shifts, 6 days a week. This was mostly in Stage IV contract, which is considerably ahead of schedule.

• **Western's contracts**—The three earthmoving contracts currently held by Western Contracting Corporation, total $12.2 million and involve a total of 36 million cu yd of excavation.

Two of the contracts, Stage IV and Stage V are the first and second contracts on the east abutment. Stage IV contract calls for excavation of 16.1 million cu yd of material, and placement of 11 million cu yd of compacted embankment and 4 million cu yd of uncompacted embankment. These quantities are exclusive of the slide being removed.

This $5.2-million contract, currently about 80% completed, is scheduled to be finished by July 31, 1957. It was started in March of last year.

Stage V earthwork, begun in March of this year, is nearly 10% finished and scheduled for completion by the end of February 1958. The $5.7-million contract includes 15 million cu yd of excavation, 9 million cu yd of compacted embankment and 5.5 million cu yd of uncompacted embankment.

Western's third earthmoving contract at Oahe—Stage I of the spillway excavation—consists of about 5 million cu yd of spillway channel excavation. This $1.5-million contract, which was started this spring, is nearly 60% finished and is scheduled for completion by next March. The excavated material is being placed in areas adjacent to the channel.

• **Big spillway**—Some idea of the size of this big spillway channel can be gained by the yardage involved—about 28 million cu yd will be removed in excavating the channel.

Western's current contract is the initial one on the spillway phase of the project. Other excavation contracts will follow, with the next one scheduled for award early next year, according to the Corps of Engineers.

• **Outlet works**—While the earthmoving contractors are moving mountains of material on the left side of the Missouri, an army of construction workers is attacking the outlet works on the other side.

Four contracts under way add up to nearly $26 million worth of construction for the six huge regulating tunnels together with their intake structures, control shafts and stilling basin.

Construction quantities involved in the four contracts include: 330,000 cu yd of tunnel excavation; 340,000 cu yd of concrete of which 140,000 cu yd is tunnel lining; 16,600 tons of reinforcing steel, and 6,400 tons of structural steel.

• **Upstream tunnels**—The upstream half of the six regulating tunnels and the intake towers are virtually completed, under a $9.5-million contract awarded Mittry Constructors in October 1953. The six tunnels were excavated to a 25-ft diameter and concrete lined to a 19-ft-9-in. finished diameter. They average 1,620 ft long.

• **Downstream tunnels**—The downstream half of these tunnels is being mined and lined under a $5.9-million contract held by Oahe Constructors. This is a joint venture of: Foley Brothers, Inc.; Donovan Construction Co.; C. F. Lytle Co.; Missouri Valley Constructors, Inc.; and Winston Bros. Geo. Lindquist is project manager; Robert Hoover, assistant project manager; and George Lyle, superintendent.

The downstream tunnels are being excavated to a 23-ft diameter, and lined to 18-ft-3-in. finished diameter. They average 1,600 ft in length. This contract got under way in May of last year and is scheduled for completion in November of next year. At present it is 25% finished. Oahe Constructors also subcontracted the last 50% of Mittry's upstream half of these six regulating tunnels.

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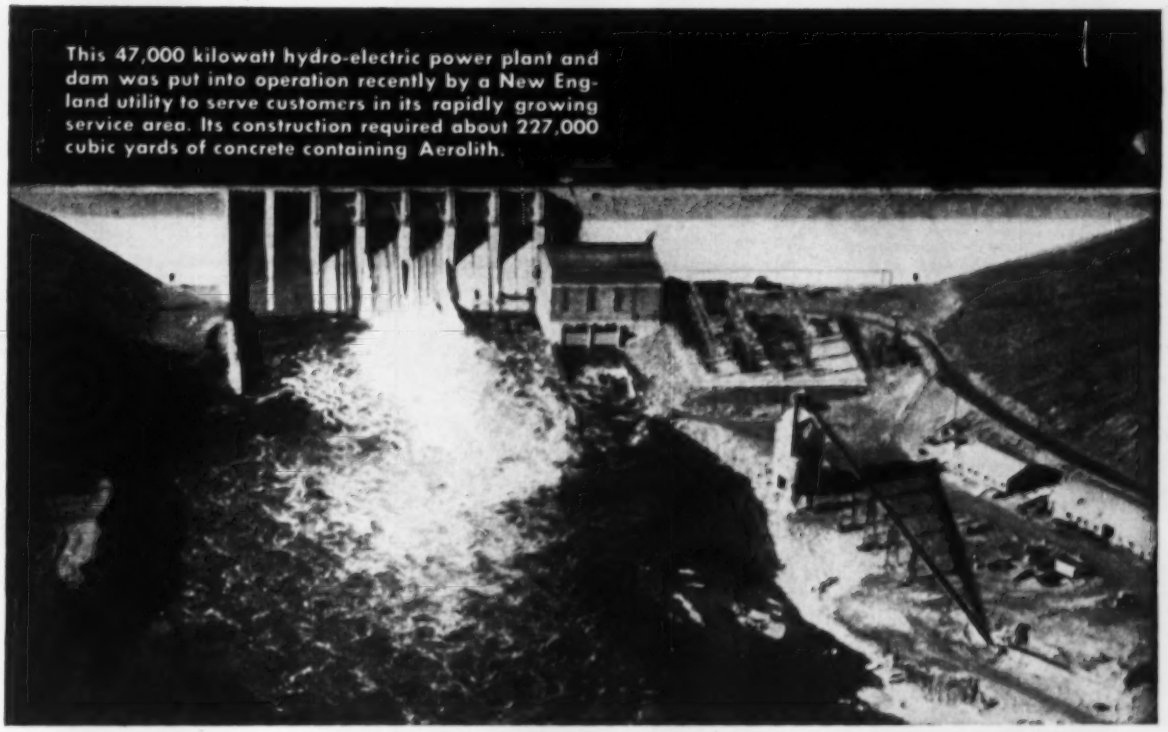

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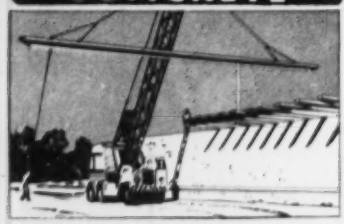
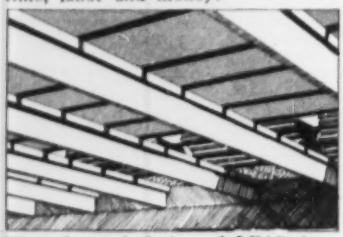


LEAP Tee Joists or Double Tee roof slabs go up much faster and easier than ordinary construction . . saves time, labor and money!



The advanced design of LEAP franchised concrete products makes for a much better job . . stronger, safer and with clear, post-free spans up to 70 ft.

You can build at much less cost when you specify LEAP franchised concrete products . . . erection time is cut sharply, less material is required, and labor savings are tremendous!

(See our listing in Sweet's Architectural File.)

franchised by
LEAP®
Concrete Inc.
Lakeland, Florida

of Bruce Construction Co.; Russ-Mitchell, Inc.; and Wm. A. Smith Contracting Co., Inc.—is constructing the stilling basin. This $5.6-million contract—begun in December 1954 and scheduled to be completed by the end of next year—is 40% finished at present. H. B. Bruce is project manager and Robert Hughes is superintendent.

• **Deep control shafts**—The fourth contract on the outlet works is just getting a good start. It covers the construction of the six control shafts located between the upstream and downstream tunnels. These 38-ft-dia shafts will extend 200 ft below existing ground surface to the bottom of the water passage in the tunnels. Oahe Constructors hold a $4.7-million contract for this work, which is scheduled to be completed by the end of next year.

Later this year the Army Engineers expect to award a contract for the superstructure of the control shafts, and installation of regulating gates.

• **Railroad relocation**—Three railroad relocation contracts, which are part of the overall Oahe dam and reservoir project, will cost a total of $1.4 million. The work involves relocation of seven miles of the Chicago, Milwaukee, St. Paul and Pacific Railroad southeast and northwest of Mobridge, S. D.

Harris Construction Co. is doing the grading and drainage work under a $500,000 contract. Guy H. James Construction Co., holds a $660,000 contract for constructing two intermediate-size bridges. Ballast and track work for the seven-mile relocation will be done by Peter Kiewit Sons' Co., under a $240,000 contract.

Other relocation work necessitated by the reservoir project includes moving the town of Pollock (Pop. 400); also two major highway bridge relocations and one major railroad bridge relocation on the Missouri River in the reservoir area.

The $350-million Oahe dam and reservoir project is being designed and built under the supervision of the Omaha District of the Corps of Engineers. Col. Thomas J. Hays III is district engineer, reporting to Maj. Gen. Gerald E. Galloway, Missouri River Division Engineer.

At the damsite, in direct charge of the project is John W. Sibert, Jr., area engineer. Charles R. Brown is assistant area engineer, and Sherman W. Williams, engineering assistant. There are three resident engineers: Albert F. Arrington, outlet works; L. G. Leavitt, earthwork; and Harry L. Dobbins, relocations.

Closure of Oahe Dam is scheduled to be made during the summer low water of 1958.

Graduate Fellowships Open For Sanitation Engineers

Three fellowships for advanced study in the field of sanitary engineering for students who have received degrees in civil engineering were announced last week.

James B. Clow & Sons, Inc., manufacturer of cast iron pressure pipe and related sewage and waterworks products, said they were sponsoring the fellowships in hopes of encouraging specialization in sanitary engineering.

The fellowships, established at Ohio State University, Purdue University, and Alabama Polytechnic Institute, are for a minimum of $1,800 to be applied to tuition, fees and, in some measure, living expenses during each year of study. Recipients will be selected by each university.

BPR Takes Over Supervision Of Alaska Road Commission

Under terms of the new Federal Highway Act passed by the last session of Congress the Alaska Road Commission has been consolidated into the U. S. Bureau of Public Roads. Personnel and records already have been transferred to the BPR's Juneau office.

The commission was a part of the Department of Interior, while the Bureau of Public Roads is under the Department of Commerce. Although Alaska is at present a district of BPR's Division 9, with headquarters in Portland, Ore., it is expected that Alaska soon will become a division of its own.

Under the reorganization the BPR is scheduled to spend nearly $45 million on Alaska highways and roads in the next three years.

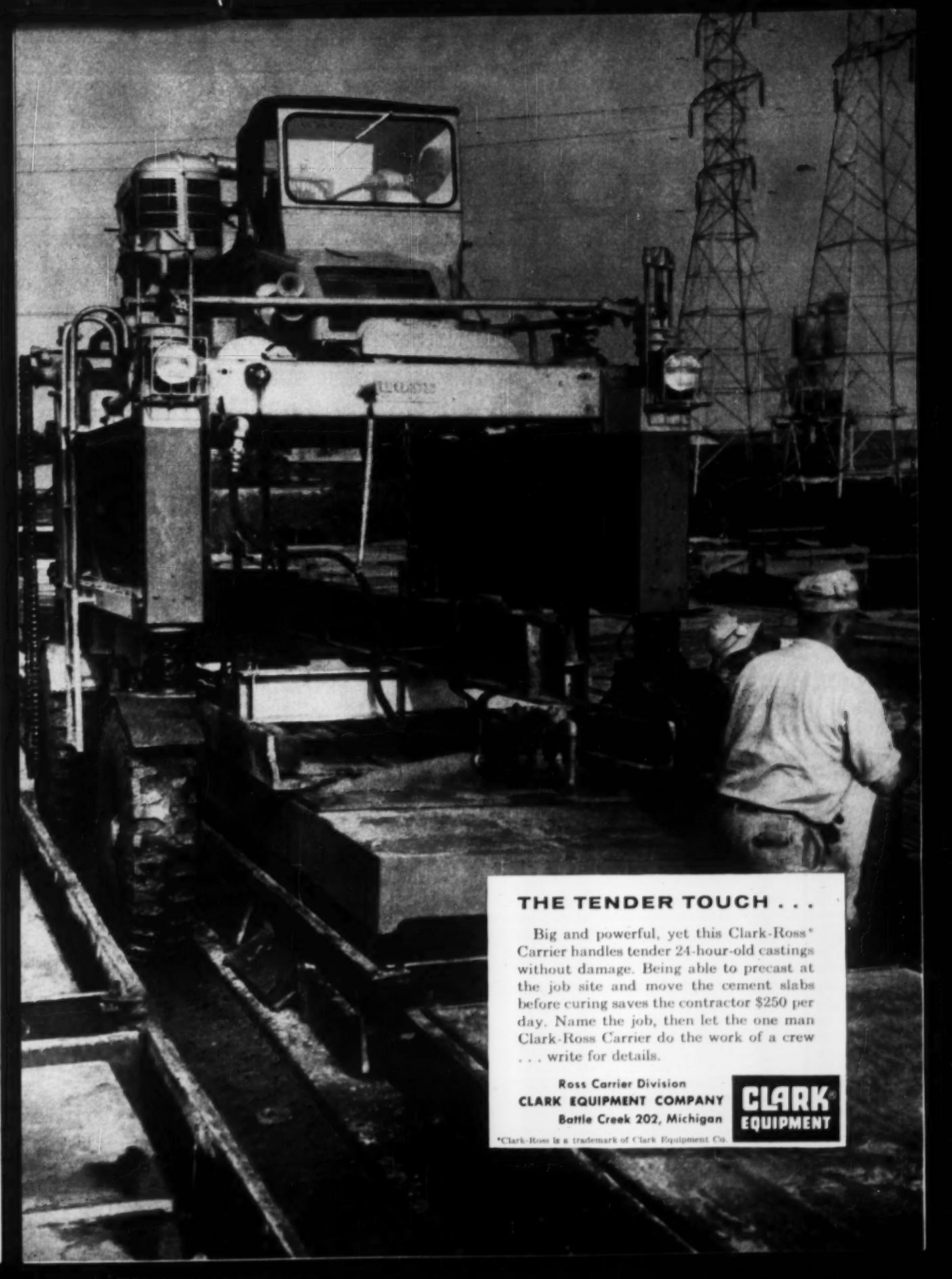
Delaware Council Moves to Unify Engineering Societies

The Delaware Council of Engineering Societies, comprising more than 2,000 members of various engineering organizations throughout Delaware, was recently formed to coordinate joint projects of the various societies.

Most of the affiliates of the disbanded Delaware Engineering Association, along with the Delaware Society of Professional Engineers are members.

The council plans to be active in professional development, student guidance and civic affairs.

Officers elected were Frederic A. Lang, group supervisor in Dupont's engineering department, president; John I. Cahalan, New Castle County Engineer, vice president; and Charles H. Collier, also of the Du Pont Co., secretary-treasurer.



THE TENDER TOUCH . . .

Big and powerful, yet this Clark-Ross* Carrier handles tender 24-hour-old castings without damage. Being able to precast at the job site and move the cement slabs before curing saves the contractor $250 per day. Name the job, then let the one man Clark-Ross Carrier do the work of a crew . . . write for details.

Ross Carrier Division
CLARK EQUIPMENT COMPANY
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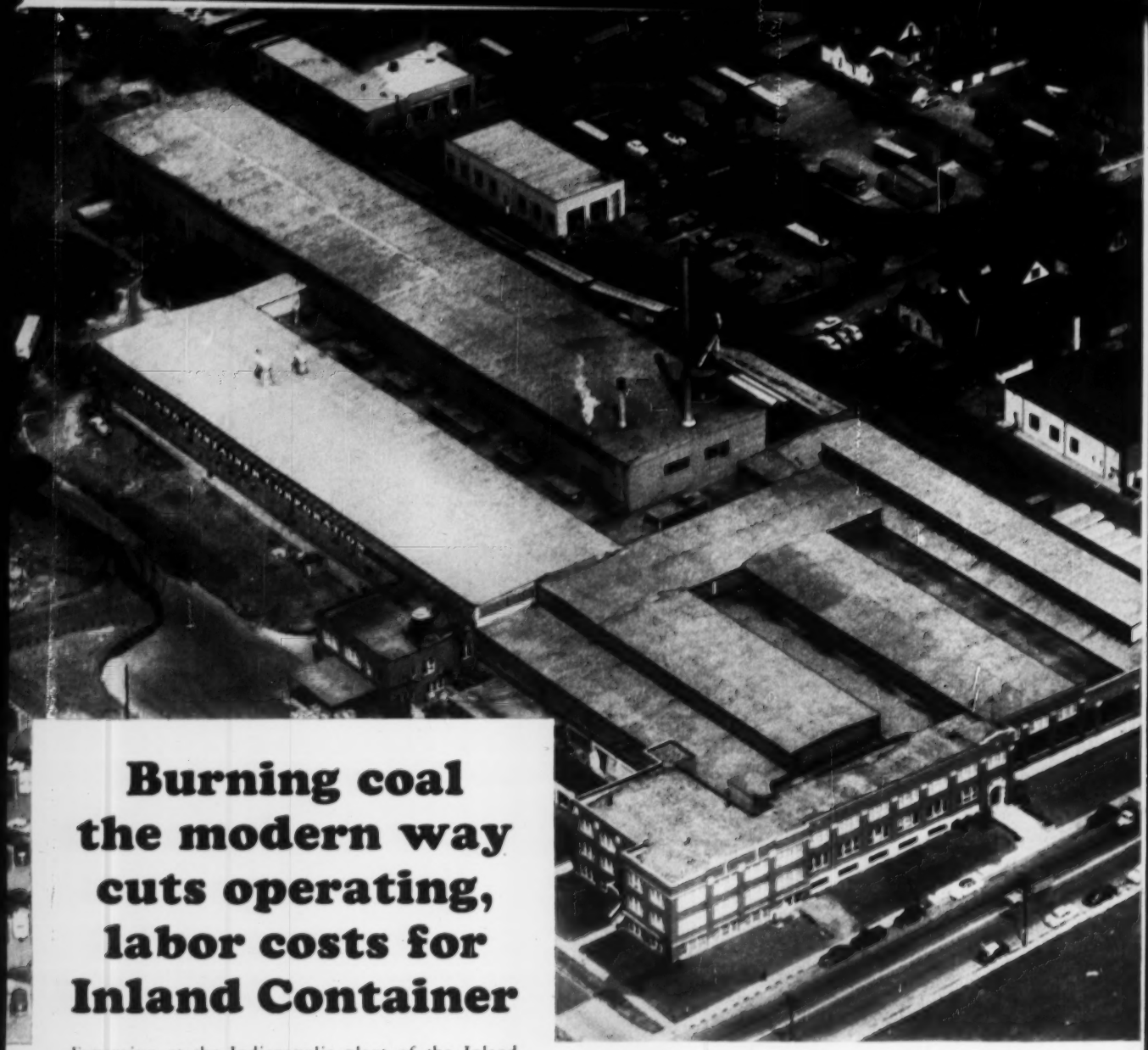


Burning coal the modern way cuts operating, labor costs for Inland Container

Expansion at the Indianapolis plant of the Inland Container Corporation required additional steam capacity. The expansion was complicated by the limited space available. Inland's Engineering Department, with the assistance of W. J. Barrows & Associates, Engineering Consultants, solved the expansion problem.

Today the power plant has a new 30,000 lb.-per-hr. boiler and also a 300-ton silo. Liberal use has been made of automatic controls; coal and ash handling have been completely mechanized. Now steam loads are adequately maintained. Boiler room performance has been highly satisfactory and economical. Furthermore, this modernization has enabled Inland Container to effect considerable savings by more efficient operation of its power system.

For further information or additional case histories showing how other plants have saved money burning coal, write to the address below.

NATIONAL COAL ASSOCIATION
Southern Building • Washington 5, D. C.

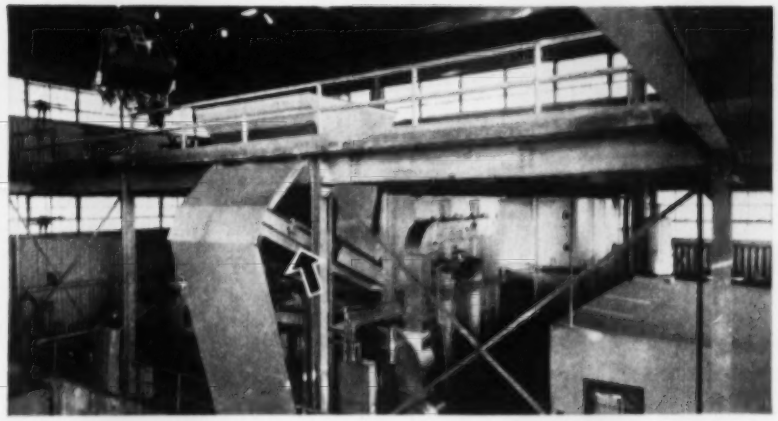
Consult an engineering firm

Designing and building hundreds of heating and power installations a year, qualified engineering firms can bring you the latest knowledge of fuel costs and equipment. If you are planning the construction of new heating or power facilities—or the remodeling of an existing installation—one of these concerns will work closely with your own engineering department to effect substantial savings not only in efficiency but in fuel economy over the years.

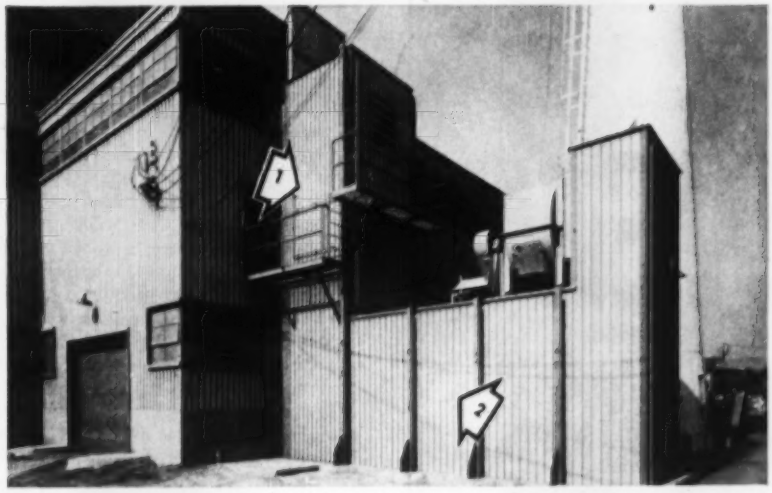
facts you should know about coal

In most industrial areas, bituminous coal is the lowest-cost fuel available • Up-to-date coal burning equipment can give you 10% to 40% more steam per dollar • Automatic coal and ash handling systems can cut your labor cost to a minimum. Coal is the safest fuel to store and use • No smoke or dust problems when coal is burned with modern equipment • Between America's vast coal reserves and mechanized coal production methods, you can count on coal being plentiful and its price remaining stable.

New Incinerator Promises Less Smog



SLOPING RAM (arrow) forces charge into furnace as bucket feeds hopper.



GAS IS CLEANED by passage down spray tower (1) and then through water scrubber (2).

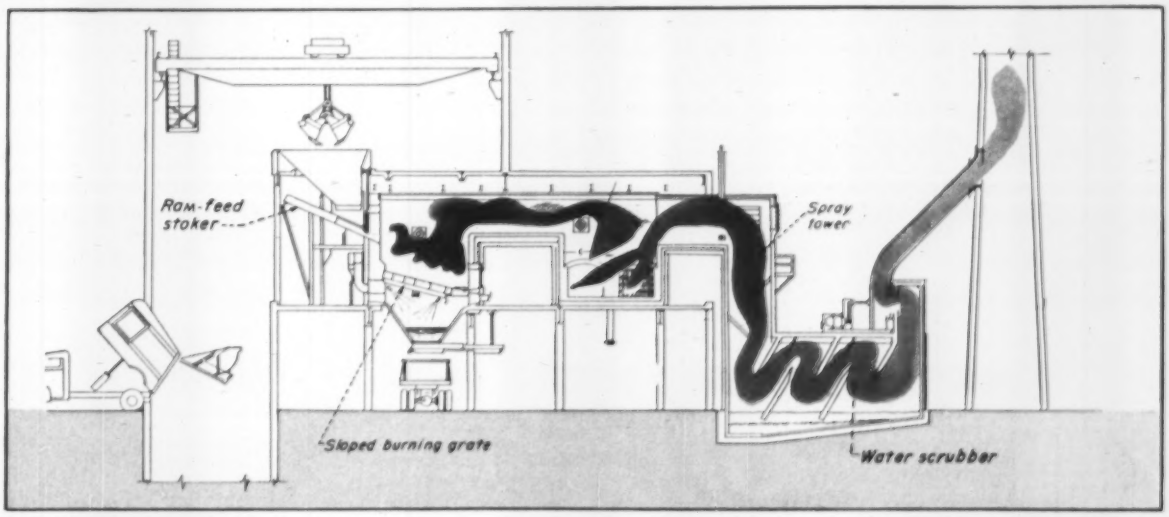
Glendale, Calif., has just doubled capacity of its municipal incinerator by adding a new unit. Ordinarily this might not be considered a noteworthy achievement. But Glendale is in the smog plagued Los Angeles Basin; which means the new unit must pass strict tests and be operated in conformance with air pollution control regulations.

Strictest test the unit has had to pass is the particulate-matter test. The incinerator may not discharge more than 0.4 grains per cu ft of particulate, with gas volume adjusted to 12% CO_2. (Limitation on gas volume prevents getting by the regulation simply by diluting the emission with great amounts of CO_2.) Particulate matter includes both solids and liquids, liquids being anything condensable in sampling trays used. In a series of tests conducted by the Los Angeles County Air Pollution Control District, highest particulate-matter concentration for the new unit was 0.3 grains per cu ft. Other tests ran lower.

The new unit centers around an American Corp. 90-ton-capacity furnace. It is placed adjacent to a Nichols Mono-Hearth-burner unit of the same capacity, which was completed in 1952. Reason for selection of the American unit this time was a simple matter of lower bid.

Rammed stoking and water scrubbing of exhaust gases, along with controlled movement of the burning material across the grate and forced draft in the combustion chamber, make the American incinerator an efficient burner.

• **Ram-feed stoking**—After rubbish is fed into the hopper, it is rammed into the



IMPORTANT FEATURES of new incinerator are ram-feed stoker, sloped and moving grates, gas washer (water scrubber)—all combine to make for efficient combustion and low particulate-matter emission. Smokestack is also used by an old unit.

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ignition chamber by an 8-ft-wide plunger moving down a 25-deg slope. This compacts the load, eliminating blowback during the charging operation, and results in a cleaner operation. It was found however, that the compacted material must be spread out in the furnace, requiring almost full-time services of an attendant.

Sloped burning grates, operated by levers, move the rubbish charge evenly across the grate bed to make a uniform pile during burning. Air forced both over and under the burning grate promotes efficient combustion. The walls of the unit are hollow, providing air passages between layers of brick. This not only cools the unit but also preheats the air to aid combustion.

Ashes falling through the grates are water-sprayed for cooling and are dumped into trucks through a hydraulically operated gate.

• **Water scrubber**—From the furnace the gas is passed into the main combustion chamber where a 1,400F temperature is maintained. The gas then passes downward through a spray tower—and into the water scrubber.

The water scrubber, or gas washer, includes five horizontal baffles that force the gas in an over-and-under path. At the same time, the gas is subjected to a fine but powerful water spray, which knocks out the particulate matter which would otherwise be emitted as flyash.

The washer is an innovation with the Glendale unit and is credited with being of primary importance in reducing particulate-matter emission to a minimum.

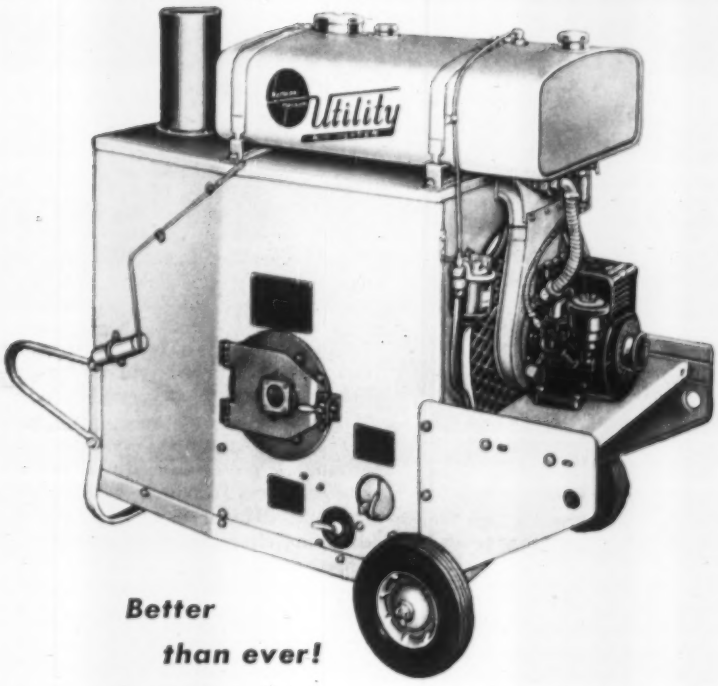
The incinerator can be adapted to burn garbage, but at present it is intended primarily for combustible rubbish. Glendale, as do most cities in the Los Angeles area, disposes of garbage, non-combustible rubbish and combustible rubbish separately.

• **Air pollution**—Many cities dispose of combustible rubbish in open burning dumps or as landfill. But in the Glendale area, there is no space for landfill operations— and uncontrolled burning on dumps would add to the already serious smog problem.

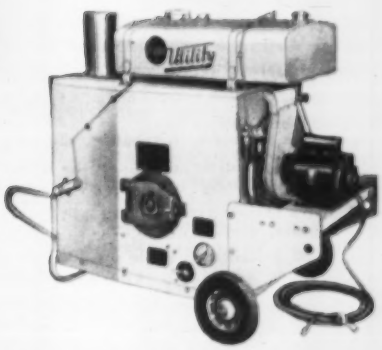
At present, nine municipal incinerators throughout the Los Angeles Basin dispose of about 1,500 tons of combustible rubbish a day—LACAPCD officials estimate that these incinerators emit little more than 6 tons of aerosol pollution a day. This compares to their estimate of 130 tons a day from backyard incinerator burning.

J. C. Albers is city engineer of Glendale responsible for administering the new unit's construction and testing. For American Incinerator Corp., Ellis E. Smauder, president, devoted considerable time to the construction and test program.

Herman Nelson... leads them all in versatility and value!



Converts from gasoline engine to electric motor in 20 minutes!



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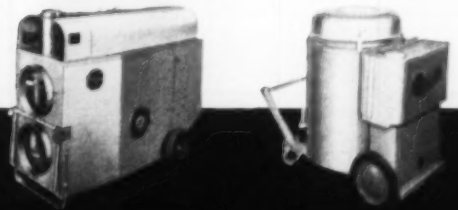
Herman Nelson "UTILITY" Portable Air Heater

Already tops in versatility and value, the "Utility" now offers you new, improved features! "Balanced air" combustion eliminates all smoke and soot. One-piece, 2-compartment fuel tank provides safe, easy filling. The "Utility" offers you *more* because you can *interchange* the power plants to suit your job . . . motor drive where you have electric current, or gasoline engine for remote job sites.

The "Utility" gives the most heat for the least fuel of any heater. It operates overnight without re-fueling. Also operates with either gasoline or fuel oils, without need of adjustments. May be used with or without ducts, and with or without venting, depending on job or location. Engineered for utmost safety, with automatic overheat cut-off, and safety trip valve that shuts fuel off when the prime mover stops. Manual heat control, self-cleaning burner. 75,000 to 425,000 BTU capacity.

ASK ABOUT THE COMPLETE LINE!



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Oil Fired, Electric motor powered. 280- 450,000 BTU capacity. Completely automatic operation.

"THRIFTY" MODEL

Oil Fired, Electric motor powered. 50- 170,000 BTU capacity. Low price!

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Can you afford

to use big production scrapers for your handyman jobs?

Check the dollars you lose in using a 12-yard scraper to do small-yardage odd-jobs that can be done in same (or less) time with a 9-yard scraper

Some contractors figure, since cost of the operator is the same, they can do handyman clean-up jobs economically with production scrapers. Check your own cost figures and make an actual dollar comparison of these extra expense items. Use your own job costs and see how much it actually costs to use big scrapers on small scraper jobs.

Extra equipment cost . . . depreciation, interest, insurance, etc.	$. . . . .
Approx. extra operating cost, based on extra horsepower and weight . . . fuel, lube, service. . . .	$. . . . .
Approx. extra maintenance cost . . . tires, repairs, etc.	$. . . . .
Lost pay-yard production while on odd-job service . . . yards per hour	$. . . . .

Every "big" dirtmoving job breaks down into work sections . . . some suitable for "big" equipment . . . some suitable for "small" equipment.

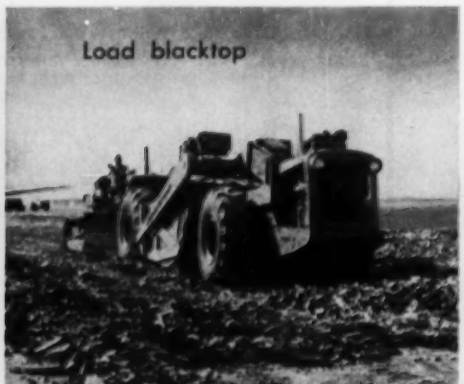
A handyman scraper (like the improved D Tournapull) fills the need for a fast, flexible, self-propelled dirtmover which works economically on both big and small-yardage jobs on long and short hauls.

It can handle pioneer dirtmoving before the rest of your equipment moves in. It can build, gravel and maintain good haul-roads to speed your production dirtmoving. It can develop drainage systems for your water-trapped cuts and fills so that you can work one or more spreads through shut-down weather. It can handle short and shallow cuts, where your big scrapers wouldn't be economical because they couldn't get a full load on a one-run pass. It can do the ditch excavation needed along your shallow-grade cuts.

It can follow production fleets to fine-grade between forms, build access roads and driveways, finish shoulders, spread gravel and topsoil, haul in selected grade material, haul and spread topsoil over median ditches, slopes and shoulders, and perform dozens of other odd jobs like those shown here. By handling these "headache" jobs on a high-speed, economy basis, the handyman scraper cuts delays and expenses that eat into your profits.

When it runs out of odd-job service assignments, the handyman scraper fills in well with any combination of push-loaded production equipment. With pay-load capacity of around 7 pay yards, these small size scrapers produce worthwhile yardage. Their easy loading and dumping characteristics, quick maneuverability, plus speeds to 29.5 mph, enable these smaller rigs to often equal, and sometimes outperform, your big capacity, but bulky and slower-moving, crawler-and-scraper combinations. While the D-size rigs can't equal cost-per-yard of the big 12 to 18-yard rigs on production earthmoving, they will pay their way on production in spare time between "handyman" earthmoving assignments.

On weekends, off-hours, or between more pressing assignments, these handyman scrapers can also give you extra profits by doing small hourly-rate or by-the-job contract work for neighboring farmers and businessmen. They are also the No. 1 tool on subdivision, airport, and other grading contracts for scattered, light-cut work requiring speed, agility and close clearances.



Handyman Scrapers . . . what abilities should you look for?

NEW . . . improved D Tournapull now has increased capacity of 7.3 yards struck, 9 yards heaped. Overall width is reduced to 8', with axle load well within 9-ton limit, to allow roading without permit. More than 3000 "D's" are in service all over the world.

1. Roadability via highway without permit is a "must" to facilitate fast, quick moves anywhere, anytime. This calls for meeting BOTH 8' width limitation and 9-ton axle-weight limit.

2. Look for ability to get heaping *push* loads in average dirt, under favorable conditions, in 45 seconds or less loading time. Scrapers should *self-load* to 60% of heaped capacity in 1 to 1½ minutes in dirt of light to medium density.

3. Be sure you can handle capacity loads without overloading clutch, transmission and tires.

4. You need high maneuverability, easy steer, ability to make 90° turns. You also need ability to steer and spread simultaneously on slopes.

5. Frequently working alone, your "handyman" must be able to pull out of mud holes or soft spots without assistance.

6. These utility scrapers should be able to fill against foundation walls, piers, alongside new pavement. They must be easy to steer accurately, able to make short turns, able to spread close against side obstructions.

7. Since you will need them on clean-up for finished grade, you need accurate blade control. Wheels should be inside cutting edge.

8. Because travel on new paving is often involved, minimum weight, and use of tires at minimum inflation are important. This will permit operation over new slab, curbs, sidewalks. Minimum weight and inflation are also important on finishing operations to prevent rutting of finished grades before final surfacing.

9. Since all rubber-tired machines in this class operate with approximately the same ratings of engine power, clutch, transmission and tires, high machine weight and bowl capacity should be checked against probability of expensive maintenance, excessive downtime and short tire-life.

10. Initial cost is a major item on machines largely involved in non-revenue dirtmoving. In your production fleet, you want the largest scraper that the one-man operator can keep busy, considering depth and length of your cuts. Extra initial cost here, pro-rated on a per-hour basis, is easily recovered in extra yards moved per hour. But, on the "handyman" service, mobility, speed, accuracy and agility are the pay-off factors. Much of your load and spread in this type service involves light cuts and short loading runs. Extra investment in maximum bowl capacity, and heavy construction to carry it, can't pay off against slow-downs in speed and increased maintenance costs on the part-time production-fleet application where you *might* benefit.

11. Remember, you are buying these 138 "horses" primarily for speed and mobility type applications. Every unnecessary pound of machinery and extra load-carrying capacity reduces their ability to "run". It is obvious that, when a tool is engineered for two opposing types of application, it must compromise in both directions. That means you lose efficiency wherever you use it.

12. Check experience, of course. The handyman scraper that has wide use and experience under all the varied conditions of world-wide service is likely to give you most efficient service, minimum downtime, and most profitable performance.

See next page for additional information on the handyman problem ▶

Blade shoulders

Mine topsoil

Your handyman scrapers do all these jobs faster, easier, and at lower cost

Grade access roads	Load blacktop
Backfill foundations	Backfill culverts
Mine topsoil	Blade shoulders
Grade driveways	Cut drainage ditches
Shape backslopes	Spread gravel
Strip overburden	Spread topsoil
Load stones, stumps	Fill-in on production
Haul sand	Spread select material
Fine-grade for paving	Finish-grade medians
Fill hoppers	Push-load and doze

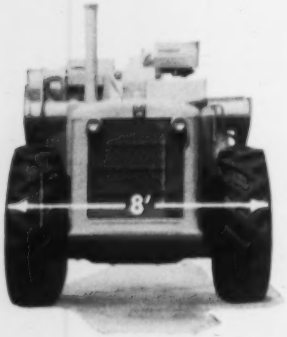
More about
"Handyman" Scrapers

Check this roadable "D" with capacity to 9 yards

Improved to meet your request for reduced width of roading without bothersome permits, the handyman D 'Pull can increase your profits on your small-yardage production assignment. It can also cut costs on pioneering and clean-up, maintain haul-roads and drainage to speed production dirtmovers, cut lost time for heavy production equipment by handling emergency assignments.

New capacities are 7.3 yards struck and 9 yards heaped.

Overall width has been reduced to 8′, so that it now can be roaded anytime without permit on highways requiring 8′ maximum clearance. Axle-loads are well under the 9-ton roading limit.



Other improvements include a new tailgate which eliminates "fall-over" of material. Higher apron lift gives easier ejection of sticky or bulky material. Operator has better load visibility. Many other improvements have been built into the "D" over the past 9 years, as a result of experience with over 3000 "D's" working in all parts of the world.

Speeds to 29.5 mph on rubber, allow it to travel anywhere . . . work faster . . . move more earth in less time than bigger tractor-scraper combinations costing thousands of dollars more than the "D"

It loads itself or can be push-loaded. It hauls earth and other materials a hundred feet or several miles economically. Optional 8′ dozer blade handles miscellaneous dozing jobs.

Here are some of the ways D Tournapull can make your investment dollars go farther:

1. Handles wide variety of jobs

Do-it-all "D" does pioneering, ditching, rough-grading, backsloping, spreads gravel and topsoil, speeds through dozens of other clean-up or small-yardage production jobs. Its easy mobility and maneuverability (90° turn) make it ideal for subdivision grading, landscaping, and for building driveways, streets and alleys. Versatility makes "D" economical on many kinds of work now done with crawlers, bigger units, or several special tools. It does big jobs or little jobs. . . reduces headaches and delays . . . earns extra profits by doing sideline work by day or hourly rates in spare time.

2. Works alone or in fleets

Tournapull self-loads, hauls, and spreads . . . can handle the complete earthmoving operation. The "D's" can push-load one another in fleet operation . . . or they can be push-loaded by any tractor or motor grader. "D" can also work profitably along with bigger scrapers in your heavy earthmoving production fleets.

3. Travels fast around the job, between jobs

You don't need a permit or a truck-and-trailer to haul D Tournapull to its assignments on your job. There are no loading and unloading delays. Mobility allows "D" to reach any assignment on the largest project in just a few minutes. 5 miles is less than 15 minutes away. Also

the improved D Tournapull, meeting 8' roading clearance and 9-ton axle-load limit can "run" anytime from job-to-job via highway, city streets, or cross-country at speeds to 29.5 mph.

4. Outproduces crawlers

Three to four times faster speeds allow "D" to match and often outwork crawler-scraper teams costing 20 to 40% more than D Tournapull. With precision push-button control, "D" does finishing work faster, easier.

5. Works in soft going

Exclusive Tournapull differential transfers power automatically to gripping drive-wheel when other wheel starts to slip. You get better traction in muck, sand, soft material throughout haul cycle for dependable performance under toughest job conditions.

6. Turns in less space

Compact design, power-steer through geared king-pin, full 90° turn, enable "D" to work in restricted quarters and on narrow fills. Jack-knifing is eliminated. 2-wheel prime-mover concentrates weight on drive wheels for better traction in slippery footing.

7. Lowers maintenance costs

Replacing the 450 to 500 moving track parts of crawlers with Tournapull's 4 rubber-tired wheels naturally reduces your repair costs. Power travels all the way on enclosed anti-friction bearings, always lubricated, always sealed from dirt. There is less friction, less wear, less lubrication cost.

8. Less weather delay

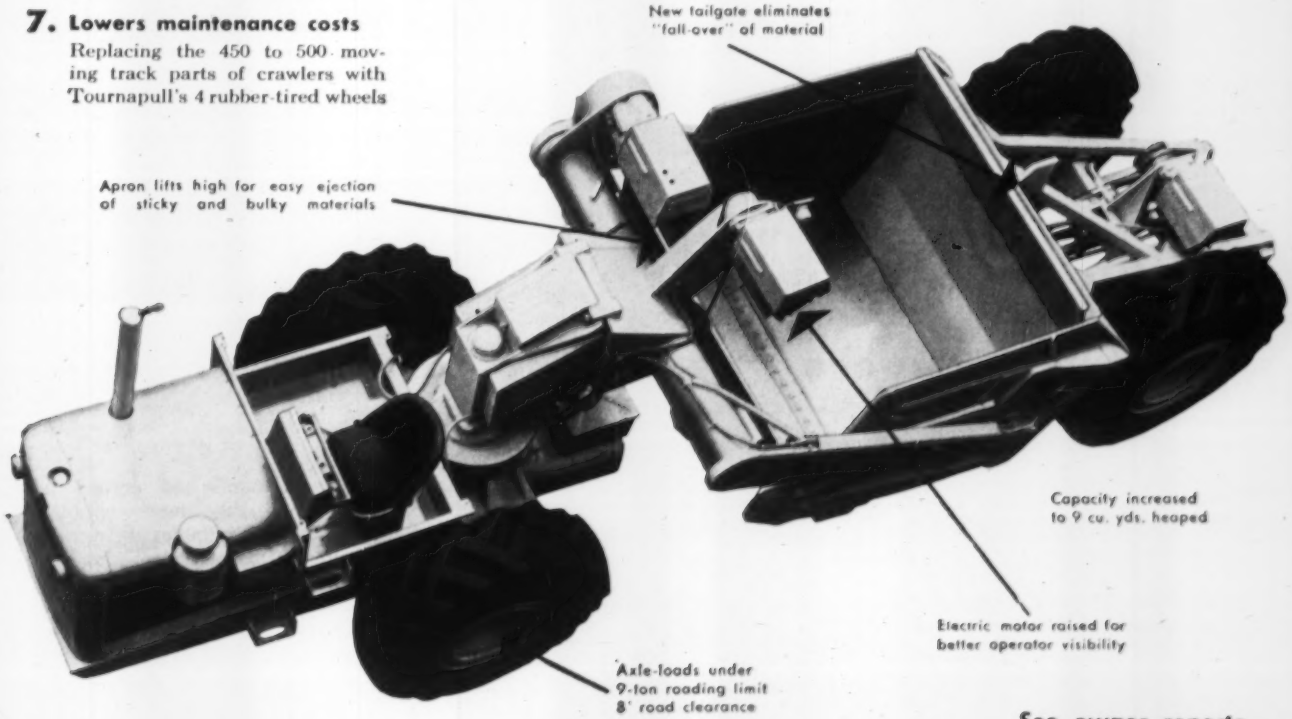
Big, low-pressure, 18.00 x 25 tires give good traction in soft going. Exclusive power-transfer differential and 90° turn, geared king-pin power-steer allow "D" to "walk" out of trouble. Tournapull works where other rubber-tired earthmovers stall. It's a handyman that's ready to clean-up the odds and ends of tough going that hold up big production tools. On many jobs a "D" can pay for its entire cost in a single season by just maintaining good drainage and fast haul-roads.

9. Safe and easy for operator

Big disc-type air-brakes on 4 wheels (2,822 sq. in. braking surface), power-steer, simple trouble-free finger-tip electric controls, low-presure shock-absorbing tires, bucket-type safety seat . . . all make busy work-days easy for operator. "D" safely travels steep grades, narrow fills, in close clearances, around sharp corners, and through conjested city and fast open-highway traffic.

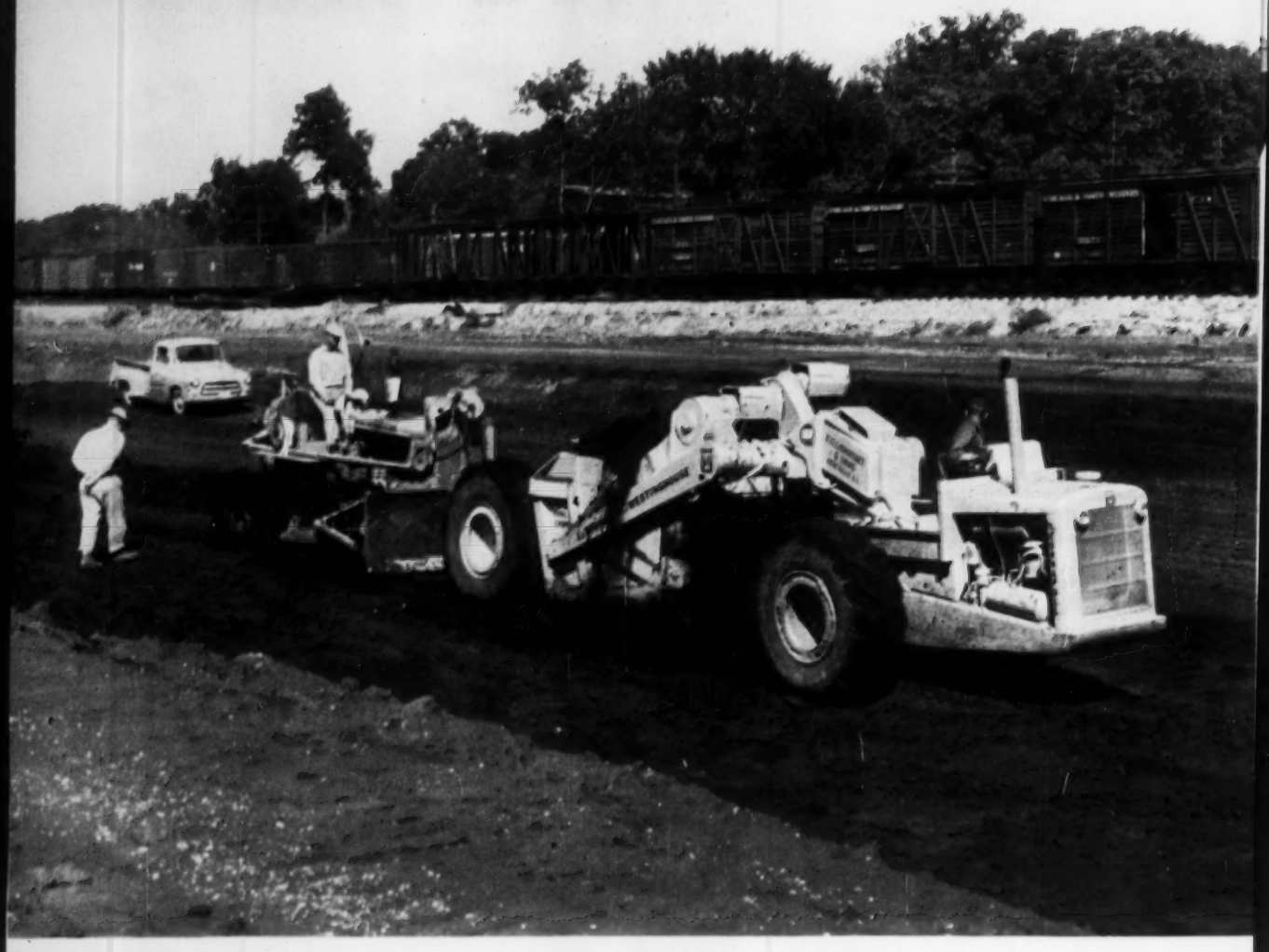
10. Interchangeable equipment

Scraper interchanges with other hauled units . . . rear-dump, side-dump or flat-bed haulers. There is also a 10-ton lift-and-carry crane, a winch-and-arch for skidding poles, logs, pipe. Dozer blade or snow-plow attaches to front-end. It's easy to keep this handyman always busy.


New tailgate eliminates "fall-over" of material
Apron lifts high for easy ejection of sticky and bulky materials
Capacity increased to 9 cu. yds. heaped
Electric motor raised for better operator visibility
Axle-loads under 9-ton roading limit 8' road clearance

See owner reports on next page ▶

More about
"Handyman" Scrapers



Study your "handyman" scraper problem...

check performance with other D Tournapull owners

We've been in this specialized business of engineering, building and maintaining a fast-traveling, handyman scraper for small-yardage and scattered dirtmoving assignments for over 9 years. Our field engineers have time-studied jobs like yours in about every kind of dirt, terrain, and climate the world around. We've continuously checked parts orders, as well as maintenance-and-repair records, on thousands of these machines. We've applied all this know-how of your earthmoving problems, and our machine performance, to perfect a high-speed, highly maneuverable, thoroughly dependable dirtmover for your job maintenance, pioneering, clean-up, subdivision grading, landscaping and other small-yardage dirtmoving assignments. Our "D" is a proven rig and we think it will make you the best buy on the market. Why not see for yourself? Write or call your nearest distributor for price and delivery.

Handle production, clean-up work

On 45-acre Hillcrest Estates Subdivision, Vallejo, Calif., 3 "D's" did clean-up for J. S. Equipment Co. They handled light cuts for streets, cleaned-up and filled around houses, did fine grading, and spread topsoil.

Fine-grades between forms

When Winkelman-Tompkins-Jones, Plattsburgh, N.Y., built runways for the Plattsburgh Air Force Base, blow-sand left imperfections in grade between forms. D Tournapull leveled narrow surfaces quickly and accurately.

Speed finish-work

S. J. Groves & Sons Co., Minneapolis, assigned 5 "D's" to finish-work on 12½ miles of Indiana Turnpike, near Howe. Here a "D" levels shoulders. Low-pressure tires roll over new pavement without causing damage.

"D" moves 60%; 5 trucks, 40%

Extending Paipa, Colombia airport runway, one "D" moved 180,000 yds. of fill for Pablo de Narvaez Ingeniero Contratista, Bogota. ¾-yd. shovel and 5 trucks moved 120,000 yds. "D" averaged five 5,350-ft. cycles hrly.

Build outdoor theater bowl

To change gravel-pit into a drive-in amphitheater, George O. Walker Construction Co., Dallas, Tex., moved 120,000 yds. of sand, caliche in 60 days with 5 "D's". Machines averaged 2,400-ft. cycles in 3 min. 22 sec.

Build earth coal-storage bins

Gibraltar Coal Company, Central City, Ky., stores coal in earth cones to avoid stockpile maintenance. Building cone pictured, 2 "D's" completed 5,160-ft. cycles delivered 6.7 yds. of clay each, in about 7 minutes.

Put turnpike finishing ahead

Near Avery, Ohio, 3 "D's" hauled fill for sub-grades, fine-graded, spread topsoil, did all clean-up on 4½ miles of Ohio Turnpike, to help D. R. Smalley & Sons, Inc., Celina, Ohio, complete finish-work ahead of schedule.

Lick steep grades, spongy footing

Hauling 675 ft. uphill, over soft ground, 2 "D's" averaged 190 6½-yd. loads of clay in 10 hrs. for Graves Brothers Co., Pine Bluff, Ark. They were rebuilding 2½ miles of State Hwy. 1, leading to an Arkansas River levee.

Maneuver on dikes, 14-ft. wide

Hauling fill to build dikes for 1200-acre Wildlife Refuge near Oceanville, N. J., 5 "D's" owned by A. D. Beyer & Sons, Inc., Williamstown, traveled 26,600-ft. cycles in 19 minutes, made 180° turns in 14-foot space.

Mine glass and foundry sands

At pits owned by Industrial Sand and Engineering Co., Ltd., Pretoria, South Africa, 2 "D's" mine 15,500 tons of sand monthly. Self-loading rigs average 0.8-mile cycles (pit to washing plant) in 4.4 minutes.

Reclaim flood-damaged farm

Repairing flash-flood damage at a 155-acre Mass. tobacco farm, 3 "D's", owned by Mel Shalloo, Lowell, removed silt, filled gorges, replaced topsoil. One-month job involved 112,000 yds. of sand, silt, loam, and gravel.

42 jobs in 27 months

Reca Construction Co., Gardnerville, Nev., used 3 "D's" on 42 widely scattered earth-moving jobs in 27 months. Picture shows Naval Air Station, Fallon, Nev., where "D's" completed three 4.4-mile cycles hourly.

Tournapull—Trademark Reg. U.S. Pat. Off. DP-1261-G

Today's improved "D" outperforms these earlier models.

LeTourneau-WESTINGHOUSE Company, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

NEW SAUERMAN SLACKLINE CABLEWAY INCREASES PRODUCTION OVER 25%

Bucket breaks water with heaping load from a 100 ft. depth...

Wherever deep digging is required and operating spans are long, the new Sauerman Slackline is adding to its margin of superiority over other types of excavators. Production increases of over 25% and in some unusual cases as high as 80% are reported.

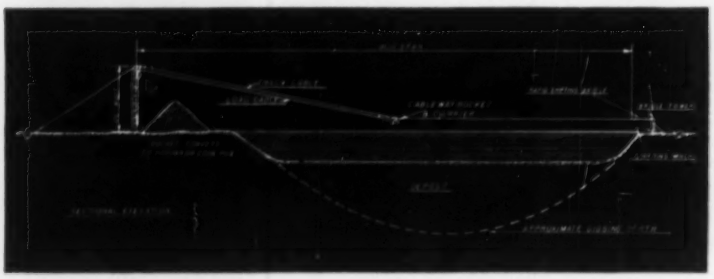
Not only is production increased but operating costs are lowered as cable and hoist wear is reduced and the machine runs with fewer peak loads and shocks—all possible from a cushioned drive using a torque convertor and other refinements.

These benefits are also available to present owners of slackline cableways. Guaranteed Gravel & Sand Co., a Sauerman Slackline user for over 35 years, has increased hoist speeds from 230 to 350 fpm. on the digging cycle and conveying speed to 800 fpm.—a gain of 25%. Guaranteed's 2-cu. yd. bucket is digging 450 ft. away from the surge pile and delivers 150 cu. yds. per hr.

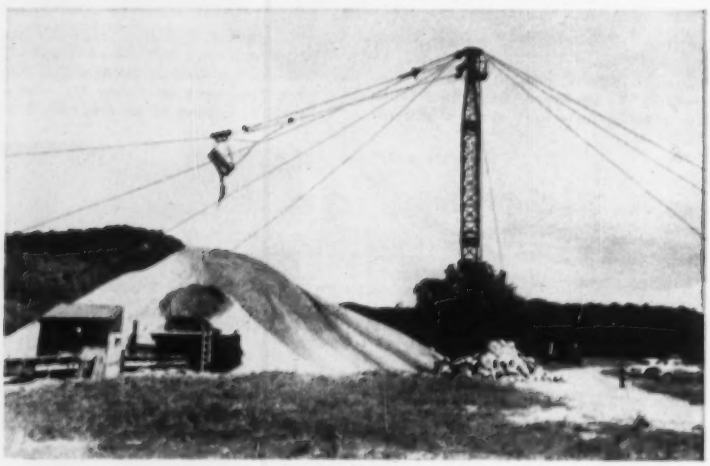
The Sauerman Method lets you work distant material—up to 1,000 ft. away and dig 100 ft. or more below water. Now more than ever the greater tonnage available through fluid drive operation makes a Sauerman Slackline Cableway the low cost way for deep digging.

Get the best machine for your job. Write to Sauerman for expert advice on any materials handling project. For additional information on slackline cableways, ask for Catalog C.

is conveyed and dumped automatically at surge pile.



Above drawing was prepared for a specific slackline installation and does not represent maximum spans. Rapid shifting bridle is not needed for many deposits.



Guaranteed Gravel and Sand Co.'s slackline bucket dumps 150 cu. yds. per hr. on surge pile from digging point 450 ft. away.

SAUERMAN BROS. INC. 632 SOUTH 28TH AVENUE • BELLWOOD, ILLINOIS

CRESCENT SCRAPERS • SLACKLINE and TAUTLINE CABLEWAYS • DUROLITE BLOCKS

An almost continuous stream of earth fills moving trucks as . . .

Loader Handles 8,500 Cu Yd Per Day

Despite the wettest summer in many years, Reid Contracting Co., Woodbridge, N. J. is handling with a single loader, three bottom-dumps and 15 trucks, more than 8,500 cu yd of earth in an eight-hour day. This according to the contractors exceeds the capacity of two 4-yd shovels—a far more normal equipment setup for an eastern highway job.

Site of operations is a 1,000 by 2,500-ft borrow pit in Montvale, N. J. Reid holds two contracts for completion of the Garden State Parkway from its present terminus at Route 17 to the New York State line, where it will connect with a proposed access road to the New York State Thruway. The 9½-mi connecting link involves, among other things, 18 prestressed bridges, 2 million cu yd of earth and 35,000 lineal ft of drainage pipe in diameters up to 66 in.

From the Montvale site—largest single borrow pit on the project—the contractor intends to remove more than a half-million cu yd of clayey sand and small boulders.

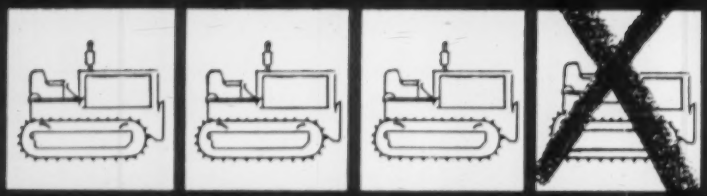
Initial operations at the pit were handled by six 18-cu-yd (struck) scrapers whose job it was to level the area so the loader could work. Leveling is now done by a standard highway patrol grader that follows along behind the loader and evens the ground for the next pass.

THE MASSIVE CUTTING EDGE of the loader takes a bite 7 ft wide and 2 ft deep. Man in background is standing on machine's control platform.

Pulled and pushed by crawler tractors, the loader cuts a swath 2 ft deep, 6 to 7 ft wide, and handles rocks up to 2 ft in diameter.

Actual loading time for each of the three 15-cu-yd bottom-dump wagons and fifteen 14-cu-yd end-dump trucks is under 30 seconds per unit, with the carriers lined up and traveling along behind the moving loader like chicks behind a hen. The 1½-mi round trip to the dumping area is made in 18 min.

With men who know converters best... it's Twin Disc 3 to 1!



For years, the construction industry has been the "proving ground" for heavy equipment. And the *toughest* jobs, under the severest conditions, have constantly been assigned to crawler tractors. That's why men who built and used crawlers were among the first to recognize the advantages of torque converter drive . . . and *are* the men who know converters best.

Today, the four manufacturers of the most powerful crawler tractors available all have torque converter equipped models. Of these, *all three of the "Big 3" volume producers*—Allis-Chalmers, Caterpillar and International Harvester—have special torque converter transmissions, in which they *standardize* on Twin Disc Torque Converter Components.

TWIN DISC

TWIN DISC
Torque Converters

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois
Branches or Sales Engineering Offices: Cleveland • Dallas • Detroit • Los Angeles • Newark • New Orleans • Tulsa

6 reasons for a torque converter in crawler tractors

For higher work output . . . and longer equipment life, more and more contractors are ordering their crawler tractors equipped with torque converter drive.

A torque converter offers six profitable, proved advantages applicable to *your* crawler tractors. 1. Multiplies torque *exactly* as needed (three-stage units up to 6:1.) 2. Engines work up in the maximum efficiency range all the time, delivering constant high horsepower output . . . doing more work than units equipped with mechanical drive. 3. Power is matched to load demands automatically, with gear shifting minimized or eliminated—where mechanical transmissions must stay in the starting gear ratio, even after starting load resistance is reduced . . . operator efficiency is boosted. 4. Heavy load pick-up is smooth, even, without clutch slippage . . . better flotation is obtained. 5. Overloads, shock loads and vibrations are cushioned *out*, through *fluid* connection . . . providing longer tractor life with less maintenance. 6. Infinite variety of ratios is available to work with, permitting smooth, accurate control of loads and delicate "inching" under power.

For these reasons, today, the four manufacturers of the most powerful crawler tractors available have torque converter drive models. Of these, *all three of the "Big 3" volume producers*—Allis-Chalmers, Caterpillar and International—have designed special torque converter transmissions, in which they have standardized on Twin Disc Torque Converter Components. In each instance, Twin Disc Engineers worked closely with the manufacturer to aid in developing this complete torque converter power package to individually suit each one of the crawler tractor's particular characteristics.

Vine-covered mound tried by Garden State as . . .

Novel Parkway Safety Island

Something new in the way of center island safety barriers is being tried by the New Jersey State Highway Department on a 7½-mi stretch of the Garden State Parkway in Middlesex and Union Counties. Instead of the usual barricades of concrete or steel, a steep-slope, vine-stabilized embankment of earth is being used to separate opposing traffic lanes.

While most of Garden State Parkway is new enough to embody all the elements of current highway design—including wooded medians up to 600 ft in width, the section being "dyked" is comparatively old. Built in 1947-8 as a divided four-lane connecting link between Edison Bridge at Perth Amboy and Union, N. J., the highway had medians as narrow as 8 ft. These strips were at road level, for use both as a drainage area and a median parking facility for distressed vehicles. As lane separators, however, they were of little value.

In 1955 this older section of highway was integrated with the parkway, and the road was widened to six lanes. The speed limit was raised from 50 mph to 60 mph. Although no fatalities have resulted from lane-jumping, there have been several serious head-on collisions, and it was obvious that remedial measures were in order.

The familiar barriers of steel, wire rope, or concrete offer protection against head-on collisions, but do nothing to prevent same-direction accidents resulting from headlight glare.

For this reason the mound-type barrier has been adopted. The 4-ft-high mounds leave visible only the tops of oncoming cars, and except in areas of converging downgrades, headlight glare is completely eliminated.

Length of the individual mounds is dictated by the distance between the centrally located storm drains. The height is constant, but the width and degree of side slope vary with the width of the islands, because specifications require that where possible a 6 to 7 ft median shoulder be provided for emergency stops from the center lane.

To compensate somewhat for the lack of space in the median strip, the outer shoulder on both sides will be widened to 10 ft and given a bituminous treatment.

The slopes are to be stabilized in a novel manner—by the planting of 100,000 Japanese honeysuckle vines. It is expected that the vines will not only firm the soil but they will reduce mowing cost, and, in season, will provide New Jersey with the only "perfumed" highway in the country.

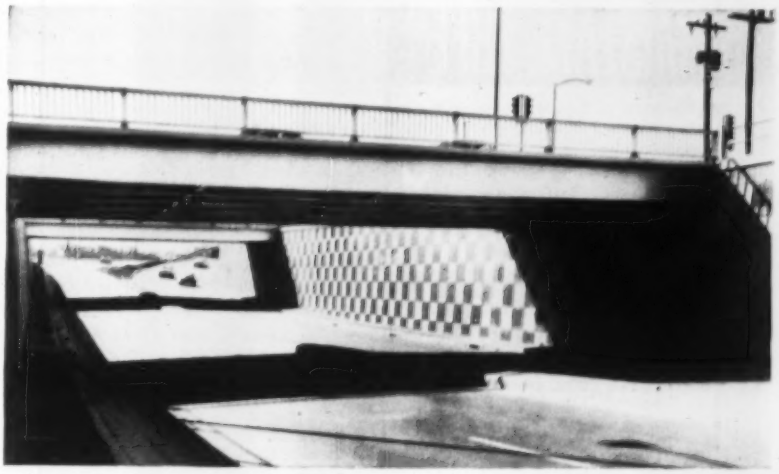
Earthwork is being done by J. F. Chapman & Son of Hillside, N. J. and landscaping contract has been awarded to Riverside Landscape Corp., of New York.

Honolulu's Traffic Tunnel Redesign to Include Invert

As a result of a recent conference of U. S. mainland and Hawaii consultants, another change has been made in the design of the "collapse" section of Honolulu's Koolau Mountain Traffic Tunnel.

From the time that a third cave-in killed five men in August 1954 (ENR Aug. 26, 1954, p. 25), progress on the project has been at a virtual standstill. Litigation over responsibility-fixing tied up the job for almost a year and a half; construction methods used at the restart of operations were such that it will take the rest of the year to move 200 ft through the cave-in area.

Where the tunnel section now resembles an inverted horseshoe, the redesign calls for cylinderizing the tube by incorporating an invert in the construction. This is intended to prevent the overhead pressures from driving the structure into the ground and forcing the roadbed up into the tunnel. Closer spacing of the tunnel ribs has also been agreed on.



Striated Plywood Facing for Forms

The Texas State Highway Department got interesting results from the use of striated plywood facing on forms used in construction of a Houston underpass. Exterior grade Weldtex, ¾ in. thick, was cut into 3 ft x 3-ft squares and nailed to form sections with striations in alternate directions to create a checkerboard pattern. The contractor, Reeves & Sons of Houston claim to have saved $2.50 per sq yd mainly by being able to reduce its usual four-man finishing crew to one man. Texas engineers are now planning a two-mile underpass which will be finished in the same way.

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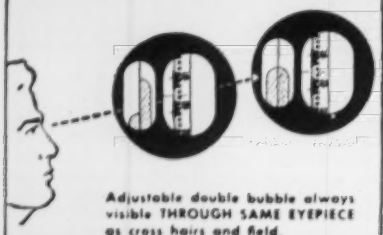
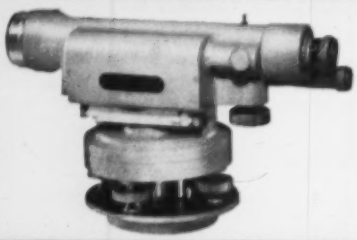
Save time
Save money

NEW LEVEL with



Adjustable double bubble always visible THROUGH SAME EYEPIECE as cross hairs and field.

DOUBLE BUBBLE



is "MISTAKE FREE"

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- American type—erecting eyepiece, 4 leveling screws
- Unbelievably fast and accurate, yet simple-to-use. Economical!

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NAME.....

ADDRESS.....

Photo courtesy Moretrench Corp.

Today's Borrow Pit: Tomorrow's Fishin' Hole

Digging a 25-acre, 22-ft-deep lake could be an expensive proposition, and one beyond the budget of most county and municipal recreation agencies, but in a four-mile Minnesota stretch of Mississippi River bottomland between Winona and Homer, a neighbor to the east, there will be three such man-made recreation facilities scheduled to open next year.

Design for 3.8 miles of construction on a new four-lane highway between the two communities called for an embankment fill that would raise the pavement above flood level. The Johnson Brothers Construction Co., of Grove City, Minn., confronted with an all-borrow job, had a choice of excavating from upland pit (with accompanying long hauls and defacement of terrain), dredging sandy bottomland material out of wet pits—or trying something different.

Picking a convenient location two miles east of Winona, Ray Johnson decided to run a dry pit operation just off the highway right-of-way. It was an unusual decision for that particular region, because normal pool level for nearby Trembealeau Dam pool on the Mississippi is only four feet below ground level.

• Deep pit to deep lake—The American Dewatering Corp., of New York City, encircled the excavation area with headers equipped with 500 wellpoints and a series of four 4,000-gpm pumps. With the system working, self-propelled scrapers, dragline rigs and off-highway haulers were moved in.

All excavating units have been working steadily, and when the borrow operation in this pit has been completed, almost a million cubic yards will have been hauled out, thus lowering the dewatered area 26 ft, a depth of 22 feet below pond level. At that time, wellpoints will be retrieved and the lake will be allowed to fill. Eventually, all three lakes will be stocked with bass and panfish.

Milwaukee Plant Produces B-12 From Sewage Sludge

Milorganite, fertilizer byproduct of Milwaukee's sewage treatment plant, is yielding vitamin B-12 for use in animal and poultry feed.

A plant owned and operated by the Vern E. Alden Process Co.—a subsidiary of the Vern E. Alden Co., Chicago, which helped develop the process—recently went into production, extracting the vitamin from dried sewage sludge.

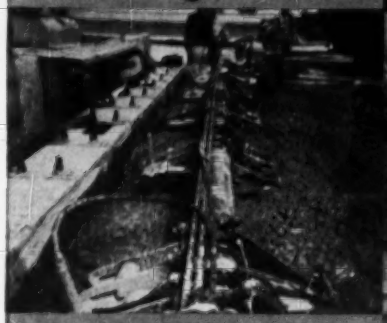
For the present, the plant will process 10 tons of Milorganite a day. As demand develops, it will make use of all 72,000 tons produced annually by the city.

In the process, the material goes through filtration to remove the vitamin and then returned to its original granular state by drying. The resulting vitamin can be purified enough so that, upon approval by the federal drug and food administration, it can also be used for humans.

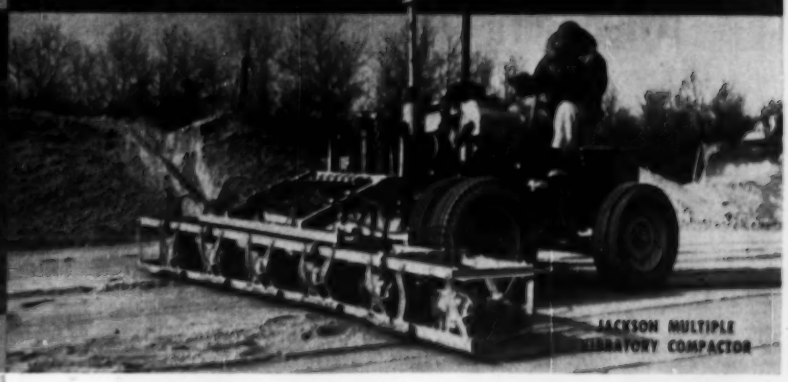
The Milwaukee Sewage Commission will receive 35% of the gross revenues from sale of the vitamins for supplying the Milorganite, a high-grade fertilizer converted by the city, from solids of sewage (ENR Sept. 3, 1953, p. 75).

Removal of the B-12 does not lessen Milorganite's value as a fertilizer, according to Raymond D. Leary, chief engineer for the city and metropolitan sewerage commissions.

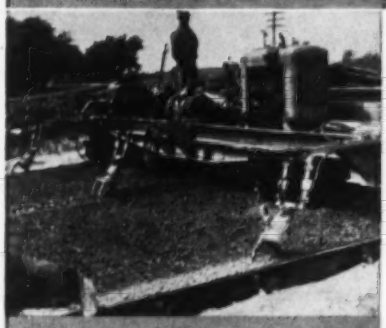
Everything FOR MORE PROFITABLE PAVING



JACKSON PAVING TUBE (INTERNAL TYPE)

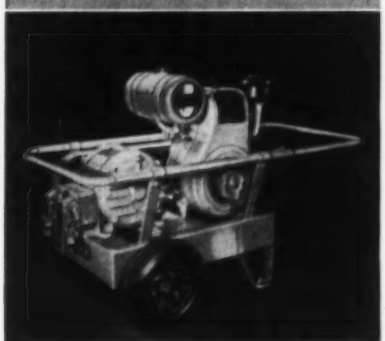


JACKSON MULTIPLE VIBRATORY COMPACTOR



JACKSON SIDE FORM VIBRATOR

JACKSON VIBRATORY SCREED



JACKSON POWER PLANT

MACADAM BASE COURSES, SUB-BASES, SOIL-CEMENT PAVING, FILLS

The JACKSON MULTIPLE COMPACTOR has now thoroughly demonstrated that it is by far the most advantageous equipment for achieving or exceeding specified densities in rock, slag, sand, gravel . . . all granular soils used in waterbound and penetration macadam construction, and in filling the voids in rock and slag courses with fines. The Jackson does it in about half the time required with other types of equipment. It is equally efficient for consolidating large granular soil fills such as bridge approaches and kindred projects.

JACKSON INTERNAL TYPE PAVING TUBE

Supplied with extraordinarily powerful motors, no concrete highway or airport paving job is too tough for this improved machine. Tubes vibrate deep in concrete, quickly plasticizing harsh dry mixes in slabs to 24" thick and as wide as 25'. It saves time, saves cement; provides greater density and compressive strength. Cuts spreading costs where no spreader is used. The tube is made up of one unit as shown for each 5'-0" (maximum) of slab width. Usually attached to front of finisher and controlled by finisher operator. Power is supplied by a Jackson Power Plant mounted on the parent equipment.

Use of a JACKSON Side Form Vibrator on standard finisher assures thorough consolidation and plasticity of concrete at side and center forms—with no "missed" spots. Labor savings effected quickly repay cost of equipment.

MUNICIPAL PAVING—BRIDGE DECKS, ETC.

For jobs of this type a JACKSON Vibratory Screed and Portable Power Plant is the most convenient, productive and inexpensive outfit you'll find anywhere. Strikes off to any crown, undercuts at curb and sideform, works right up to and around all obstructions. Two men easily handle it on all slabs up to 30 feet wide, and it may be rolled back for second passes on 4 rollers.

PORTABLE POWER:

Thoroughly reliable, time-proved plants in capacities of 1.5 to 7.5 KVA . . . equipped with permanent magnet generators requiring no maintenance or adjustment. They provide both single and 3-phase 120 V., 60 Cy. AC and may be used for lights as well as operating all JACKSON equipment.

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Nylon cord tires reduced off-the-road tire failures...

NOW NYLON CUTS TRUCK TIRE COSTS, TOO

VIC ZEMAN
Vic Zeman Construction
Maribel, Wisconsin, reports:

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"With savings on tire replacements and delays, and with the extra recaps possible with nylon cord tires, I figure my long-run savings at 50% of standard tire costs."

PROVE TO YOURSELF that nylon cord truck tires give more mileage, more retreads—lowest cost per mile. Ask your dealer about nylon cord truck tires today. (Du Pont makes the tough nylon yarns, does not produce tires.)

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NOW . . . IN PASSENGER-CAR TIRES, TOO . . . THE STRENGTH OF NYLON . . .
FOR UTMOST SAFETY . . . SUREST PROTECTION AGAINST TIRE TROUBLE

Colombian railroad will spark new era of development and trade through direct access to northern ports on Caribbean

ON THE WAY OUT as principal carriers of eastbound freight, outmoded stern-wheelers will be replaced by diesel-electric train service on two-day schedules.

MAJOR RIVER CROSSINGS are being provided through use of standardized truss designs. Nowhere along the entire 468-mi route does the roadbed exceed 4% grade.

ROUTE will connect industrial core of Colombia with Atlantic shipping.

Building Colombia's Future

What started as a railroad bypass for difficult-to-navigate upper reaches of the Magdalena River in Colombia has developed into an $80-million vital supply artery which will bypass the Panama Canal as well.

Original plans called for a 248-mi rail line between Puerto Salgar—extremity of the existing Colombian network 75 miles northwest of Bogota—and Gamarra, on the Magdalena River more than halfway to the Caribbean coast. There, it was to dead-end at a terminal-and-transfer station, serving riverboats that ply between Puerto Salgar and Barranquilla, principal northern seaport.

In 1954, the first plan, which would have substantially reduced shipping time to Bogota, was supplanted by a new one that will increase rail mileage to 468 and decrease travel time to less than two days. At present, it takes Mississippi-type steamboats as long as two months to make the trip in dry seasons.

The extension of the line from Gamarra to Fundacion in the north, will connect it with an existing 58-mi rail line to the Caribbean port of Santa Marta, which is being expanded in anticipation of increased trade. Barranquilla, however, will continue to be the major port, linked with the new "Atlantic Railroad" by a new freight-transfer highway that will serve railroad-operated tractor-trailer units.

• **International project**—The new railroad, slated for completion in 1958, is a

Waterstop *in place in seconds!*

LABYRINTH WATERSTOP after first pour has been made and form removed. The grooves receive the concrete from the second pour, providing an interlocking joint.

Just a few seconds were needed to nail this LABYRINTH WATERSTOP to the form... just a few seconds and water seepage worries were over before they could ever have a chance to start.

LABYRINTH WATERSTOP forms a waterproof bond between two pours. The corrugated ribs bond firmly with the concrete.

LABYRINTH WATERSTOPS are made of flexible polyvinyl plastic... that has superior weathering qualities, is not affected by temperature changes and chemical activity.

LABYRINTH WATERSTOPS are easy to work with, can be cut to any desired length. "L" and "T" joints can be welded with just a hot knife. Find out now how your costs can be cut... and end your seepage problems. Just mail the coupon to:

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DENSE JUNGLE GIVES WAY to modern construction equipment in Andean uplands.

STANDARDIZED MINOR STRUCTURES are also the rule, with 50-ft beams and concrete-capped-and-filled steel-pipe pile bents on the twenty-one bridges under way.

project of the Colombian Government's Ministry of Public Works and the Colombian National Railroads, with the Madigan-Hyland South American Corp., New York City consultants, retained for design and consultation.

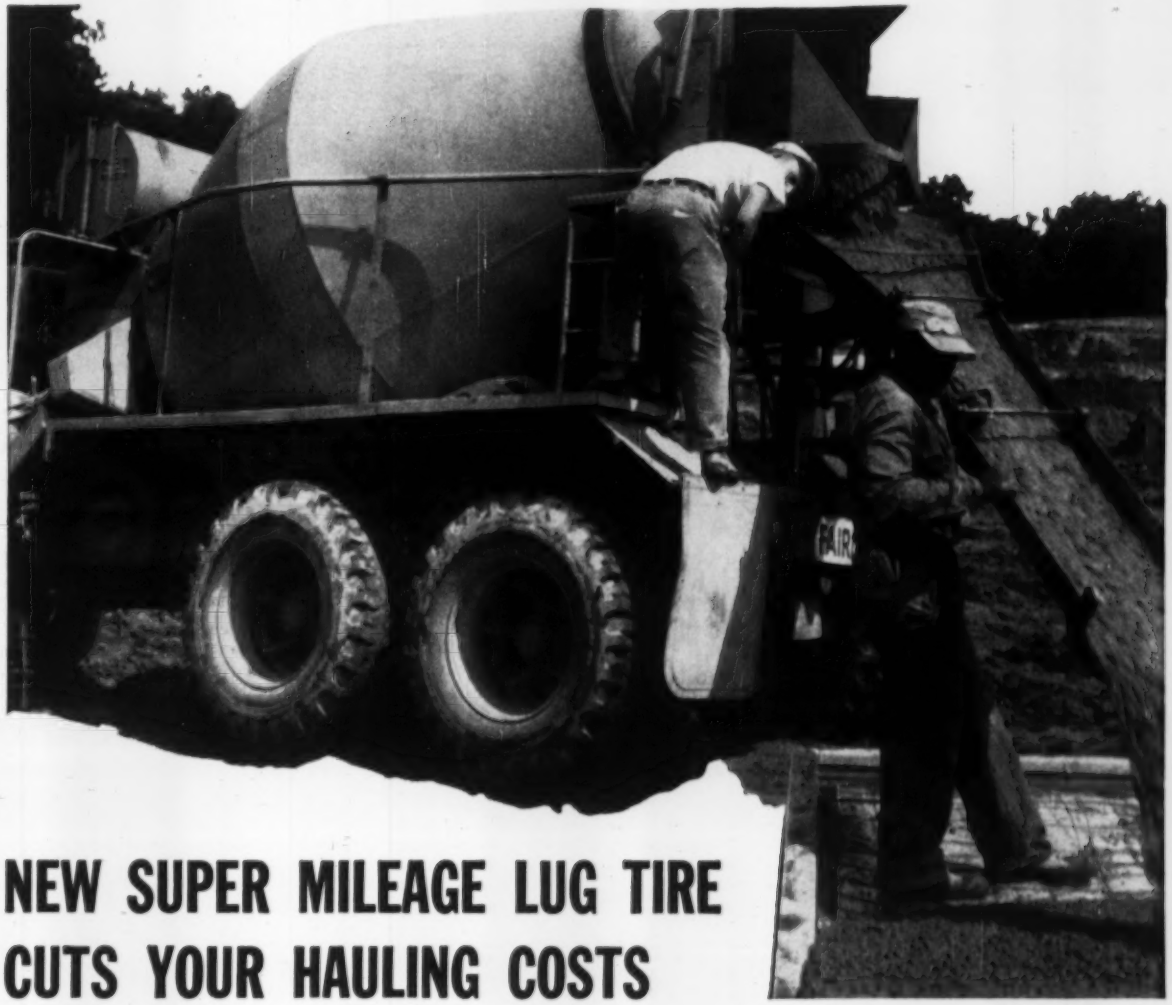
Excavation and roadbed construction is almost entirely in the hands of Colombian contractors. But one contract for 105 km (65 miles) is being handled by a foreign firm, Construcciones Moore, a South American company operated by Nathan Moore of Los Angeles, Calif.

All contracts for structures so far have gone to foreign contractors. These have been contracts let for 26 bridges (of a total of about 60), with all four major crossing jobs going to German contractors and 22 smaller projects to a single French firm on low bids.

Madigan-Hyland designed standard units for construction of all bridges. The four large structures are designed around basic 250-ft steel through-trusses resting on concrete piers on pile foundations. The smaller structures are multi-span, with standard 50-ft steel beams carried by concrete-capped-and-filled steel-pipe pile bents.

Farthest along of the major structures is the Sogamoso River crossing, the first to be started. It has two of the standard through-trusses and a single pier in mid-stream. Cofferdams are in on the second largest of the bridges, the Puerto Salgar-Dorada crossing, and concrete piers on pile foundations are being constructed. The Salgar-Dorada crossing of the Magdalena River will carry the railroad from the eastern to the western bank on four of the 250-ft trusses.

From Dorada to Puerto Berrio, the roadbed will follow the western bank and make the final Magdalena River crossing at Berrio. The Berrio bridge, largest structure along the route, was originally designed as a six-truss facility,



NEW SUPER MILEAGE LUG TIRE CUTS YOUR HAULING COSTS

—— PULLS BETTER OFF ROAD, TOO!

Here is a new Firestone tire that will cut your operating costs to the barest minimum.

On hard paving, its deep-ribbed, wide center treads move along smoothly without the tire-wearing, equipment-killing vibrations so often set up by ordinary type heavy-duty tires. As a result, you get more original tread miles. And, heavy lug bars give you all the pulling power you need for off-the-road duty.

Firestone Super Mileage Lug tires have 60% deeper tread to give you more low-cost miles. More than that—they are built with husky, Safety-Tensioned *Gum-Dipped*® cord bodies. This exclusive Firestone process gives a stronger tire body and makes it possible to get more retreads on every tire.

Any way you look at it, you'll save money with Firestone Super Mileage Lug tires! If you operate dump trucks, cement mixers, logging, mining or any other heavy-duty trucks, it will pay you to contact your Firestone Dealer or your Firestone Store now for the best deal you ever got on the longest wearing, most dependable tire ever built for on- and off-the-road performance!

Test after test proves you get extra original tread miles and more retread miles at lower cost with Firestone Super Mileage Lug Tires.

DEEPER TREADS LAST LONGER!

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Truscon Zilicon has been used to waterproof concrete in construction projects all over the world. Added to Portland cement mortars and concrete mixes, it also provides these benefits . . .

- Makes concrete more resistant to freezing and thawing, wetting and drying
- Lubricates the mix, makes for easier workability, easier flow
- Reduces tendency to "honey-comb," saving the after-cost of patching
- Contains no lime, clay or other extenders added solely for bulk or weight

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NATIVE HARDWOOD AND BRAWN go into completing one section of the roadbed. Most of the construction aside from structures has been an all-Colombian effort.

using the standard units all the way. But the government, fearing obstruction of river traffic, insisted upon a 500-ft channel, so final design called for four standard trusses and a specially designed 500-ft river span.

• **Tough going all the way**—Big problems are being encountered over most of the route, which winds through mostly rolling country, often covered with dense jungle growth and extensive swamp areas. Several cuts through difficult materials approach 100 ft in depth.

One of the biggest problems is danger of slides in the deepest cuts. Because of these, bottom widths have had to be increased over the minimum 20-ft bottom width originally set by the government to insure service uninterrupted by track obstructions.

Unstable clays encountered in most contract sections have required extensive benching. This same soil structure has resulted in scarcity of suitable ballast material, making it necessary to use either screened bank-run gravel, or crushed oversized gravel available in widely spaced pockets along the right-of-way. The scarcity of rock is forcing the stockpiling of ballast material at two locations far in advance of actual operations in those sections.

The topography and nature of the terrain made location a problem also. Photogrammetry was used extensively in the preliminary stages, then ground topography was established from belts or strips selected by aerial photography.

In swampy sections, little mucking has been done. In a few very bad areas, unsuitable material has been blasted out, but for the most part, fill material has just been piled on. In places where there is danger of wave action, berm has been placed as counterweight.

• **Economic significance**—In only five years (since the Colombian government liberalized and simplified foreign exchange provisions) American and other foreign investors have developed a bustling industrial center around the city of Cali, scene of a recent tragic explosion that left 420 dead and over 800 hospitalized. More than 50 American companies, among them Colgate-Palmolive-Peet, Armco, National Carbon, Container Corporation, the American Viscose Corp. and Goodyear Tire and Rubber Co., are established in the area.

The blast, which leveled a railroad station and a large part of an older part of the city, did not affect the buildings of the new industrial section.

A valley power authority—staffed with many American engineers—is developing hydroelectric power to keep pace with industrial demands. Basic industry is also being wooed, with an iron and steel industry rising at Paz del Rio; and attractive fields for industrial expansion are growing in food products, metal working, chemicals and textiles.

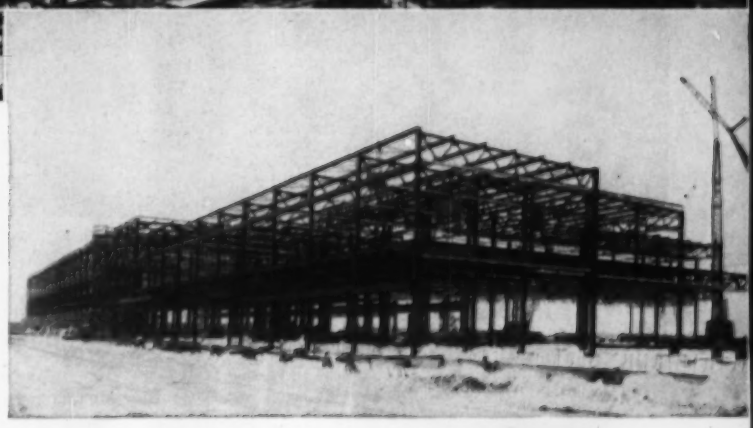
The first Solvay alkali plant in South America was built in the Cali area in 1952, and the other industries have come along, largely due to inducement of protective import duties.

About 90% of the country's trade with the United States is with the East Coast (Atlantic) ports; and with slower means of transportation connecting industrial portions of Colombia with the Caribbean, trade between the two countries have never approached its potential volume. For the first time, the eastern part of the country will be joined with the western portions. The improved communications between coastal regions are being enthusiastically received in the region of Salgar and Berrio, because, with the resulting new development of the area, both towns will lose their reputation as rail ends.

It is claimed that the 1958 opening of the railroad with the resulting impact stimulus to U. S. A.-Colombian trade, will be one of the most significant economic events ever recorded in Latin America.

(*International continued on page 68*)

Another Modern Plant by **AMERICAN BRIDGE**



METAL STAMPING PLANT

FISHER BODY DIVISION

GENERAL MOTORS CORPORATION

NEAR MARION, INDIANA

One of the largest industrial projects undertaken in this country in recent months is nearing completion on schedule. It is the vast new metal fabricating plant for the Fisher Body Division of General Motors, located near Marion, Indiana.

All of the 32,050 tons of structural steel that went into this big project was fabricated and erected by the American Bridge Division of United States Steel. The various integrated buildings and related structures comprising the modern plant include:

PRESS SHOP—about 440′ x 1128′—consisting of one transept crane aisle, 120′ x 1128′, and fourteen Press Pit Crane Bays, 80′ x 440′.

METAL SHOP—about 563′ x 1128′—plus Shipping Dock and Future Craneways, 123′ x 964′.

PRESS PIT GIRDERS—for an area about 260′ x 960′ (249,600 sq. ft.) and **PRESS PIT FLOOR FRAMING** for the same area.

BALER HOUSE—78′ x 120′ x 58′1¾″ high.

BOILER HOUSE and PIPE TRESTLE.

YARD CRANE RUNWAY—60′ span x 166′ long x 29′ high, supported on A-frame bents.

INDUSTRIAL WASTE TREATMENT PLANT BUILDING—32′3″ x 36′6″ x 19′8″ high, with mezzanine floor 10′ x 19′.

All field connections were made with either high tensile or ordinary bolts.

If you would like to know more about the advantages of having American Bridge handle the structural steelwork for your expanding industrial facilities, just contact the nearest office. Or an inquiry direct to our Pittsburgh headquarters will bring full information.

GM GENERAL MOTORS

General Contractor for Project:

Huber, Hunt & Nichols, Inc.
Indianapolis
and
Ragnar Benson, Inc., Chicago
(a joint venture)

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Designs By:

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SONOTUBE®
FIBRE FORMS
for round columns of concrete

Low-cost SONOTUBES were used to form supporting columns for this school building to reduce construction time and cost.

SONOTUBE Fibre Forms erect easily because they require minimum bracing . . . handle easily because they are lightweight . . . and reduce finishing time to a minimum because they strip easily when recommended methods are followed.

Save time, labor and money . . . figure on using SONOTUBES on your next institutional or industrial building job!

Low-cost SONOTUBES are available in sizes from 2" to 48" I.D. up to 48' long. Order in required lengths or saw to your specifications on the job.

Use Sonoco's patented "A-Coated" SONOTUBES for finished columns; wax coated also available.

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. . . International

Honduras Highways

Comprehensive program aided by U. S. consultants

Utilizing local funds and a $4.2-million loan from the International Bank, the Republic of Honduras is embarking on a wholesale development of the country's entire highway system. Supervision of the work has been placed in the hands of a joint venture of two U.S. consulting firms, Charles M. Upham & Associates, Washington, D.C., and Porter, Urquhart, McCreary & O'Brien, Newark, N. J. In addition to design, the job of the consulting engineers involves reorganization of the highway department, organization of a maintenance division and the training of personnel.

There are some 1,500 miles of existing road in the country. Present work is concentrated on a location study, preliminary design and cost report for about 330 miles of primary road to be constructed during the next several years. The Porter staff in Newark is working up this report from data provided by the field staff and from contour maps prepared from aerial photographs under a subcontract with Lockwood, Kessler & Bartlett, Syosset, N.Y. Design studies for the necessary bridges are being made at Newark under the supervision of L. C. Urquhart.

The consultants' staff in Tegucigalpa, Honduras, is headed by Paul O. Harding as project manager. Prior to joining the Porter firm, Harding was assistant highway engineer in Los Angeles for the California Division of Highways.

River Valley Job

India's Hirakud project in partial operation

One of Asia's largest multipurpose river valley schemes went into operation in this month with the substantial completion of the first stage of the Hirakud project in Orissa (southeast India.)

Some 100,000 acres of land will receive irrigation as the waters of the Hirakud reservoir are released into the newly completed Bargarh Canal. The first 24,000-kw power generator also has been commissioned. Three more units will be commissioned at the beginning of next year to bring the project's total generating capacity up to 123,000 kw. By 1958-59, it is expected to extend irrigation facilities to another 350,000 acres.

Hirakud's first construction stage con-

sisted of a 3-mi-long, 200-ft-high dam, partly earth fill and partly concrete and masonry. There are two concrete spillways with earth dams between and on their left. The masonry power dam is on the right bank. Dikes totaling 13 miles stretch across low valleys at either side of the dam.

The dam stores 6.25 million acre-ft of water for irrigation and power. It also has helped control floods during this year's heavy monsoon downpours. The Bargarh and another still-uncompleted canal take off from the reservoir —one on each side—to form the backbone of the Hirakud canal system, which with its branches and tributaries will extend over 500 mi.

The first phase has cost India around $150 million. Its engineering direction has been in charge of M. S. Thirumale Iyengar who previously directed the work on India's Tuogabhadra Dam.

Austria to Assemble Group To Go After Worldwide Work

In a bid for active participation and construction work, the Austrian Federal Chamber of Commerce has announced plans to set up this fall the Austrian Consulting Engineering Company Ltd. Membership in the new company will consist—on a voluntary basis—of all technical, civil engineering, and commercial bureaus now working in the field of projecting, organizing and building industrial enterprises.

Plans call for an initial entry in the fields of consulting engineering and architectural planning on a worldwide scale. Subsequent activities will be directed towards getting contracts for Austrian industrial production firms.

Principal targets of the new firm will be jobs in the Near, Middle and Far East, Africa and South America.

Bid Date Is Extended For India Hydro Plant

With foreign contractors expressing greater interest than was anticipated, bids on the Hanumannagar Barrage for the Kosi project in northeast India are being accepted until October 23, 1956.

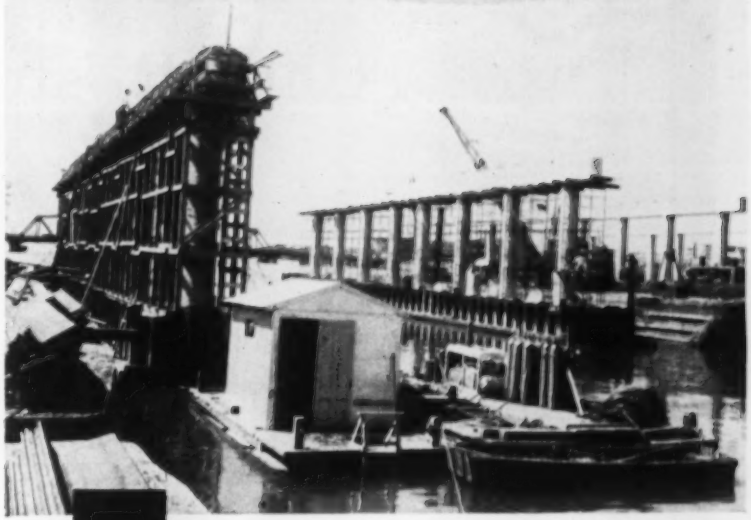
Original closing date for bids was June 15, had been extended to Sept. 29.

Part of the $93.7-million Kosi project, total cost of the barrage construction work is expected to be about $19 million and is divided into two parts, the main and diversion spillways costing $14.7 million and the western and eastern earth dams.

The main spillway will be 3,190 ft long and will be concrete construction.

The work is to be completed by the end of June 1961.

BRIDGE-BUILDING WITH LOW COST SONOTUBES!®



Providence River Bridge, North-South Freeway, Providence, R. I. Rhode Island Dept. of Public Works, Div. of Roads & Bridges. M. A. Gammino Company, contractors. Charles A. Maguire & Associates, Boston, consulting engineers. Photo: Courtesy New England Construction

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for round columns of concrete

The typical river bent for the Providence River Bridge included a concrete girder about 140 feet long supported on eight 36 inch diameter round concrete columns formed by SONOTUBES.

These columns, in turn, are supported by a solid granite-faced pier section resting on a heavy tremie seal foundation and long steel H-piles.

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Low-cost SONOTUBES are available in practically all sizes up to 48" I.D. and to 48' long. Order in required lengths or saw to your specifications on the job.

Use Sonoco's patented "A-Coated" SONOTUBES for finished columns; wax-coated also available.

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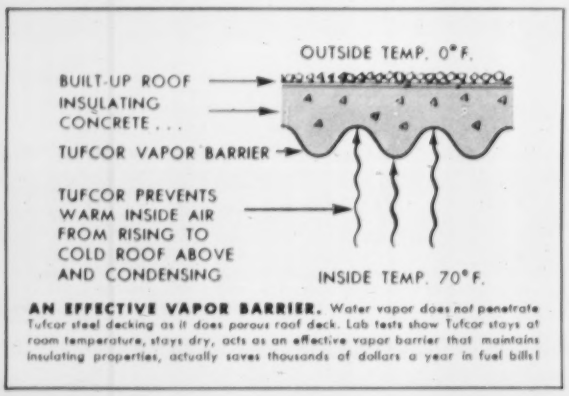
655 acres of buildings, parks, roadways and taxi-ways . . . facilities for 6000 cars and 140 airplanes at a time . . . 8½ million travelers a year—that's New York International Airport's dazzling new "Terminal City," rushing now toward completion. And to make sure it's the world's finest airport, to keep it on schedule, The Port of New York Authority is specifying the finest building materials available. It chose Tufcor permanent steel decking for casting 412,000 square feet of floors and 138,000 square feet of roofs in the International Arrival Building, to be completed in mid-1957. In the floors, Tufcor serves as a permanent steel form for lightweight, structural grade concrete and provides a safe platform for workers on the job. In the roofs, Tufcor deep corrugated steel is the ideal long span, high strength, permanent steel base for lightweight insulating concrete. Unsurpassed for high strength and toughness, it is also firesafe and serves as a positive check against roof fires. And Granco's new, hot-dip galvanizing process guarantees an even coating of protective zinc. Like to have the advantages of Tufcor on *your* next job? For more information, costs or estimates, consult Granco home or district office. Attention: Dept. E-65.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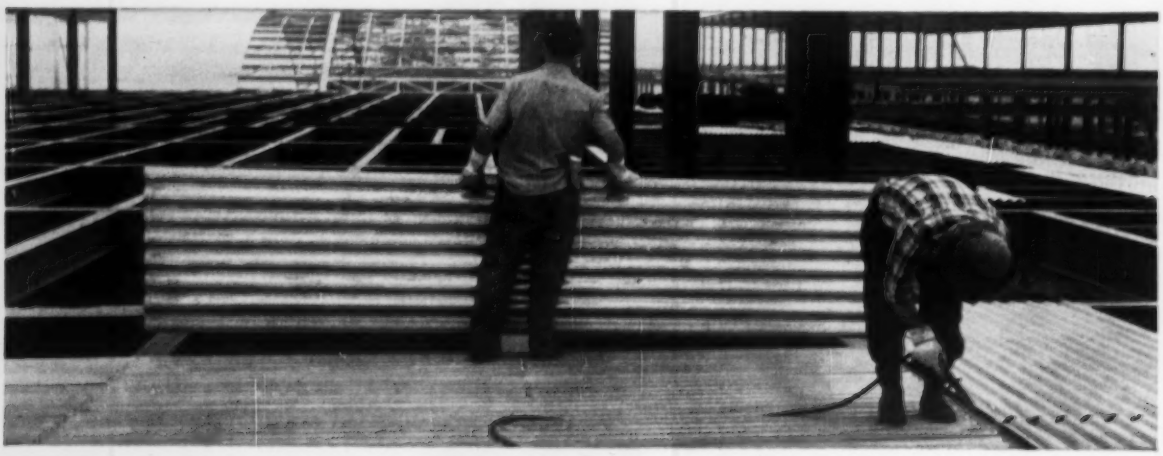
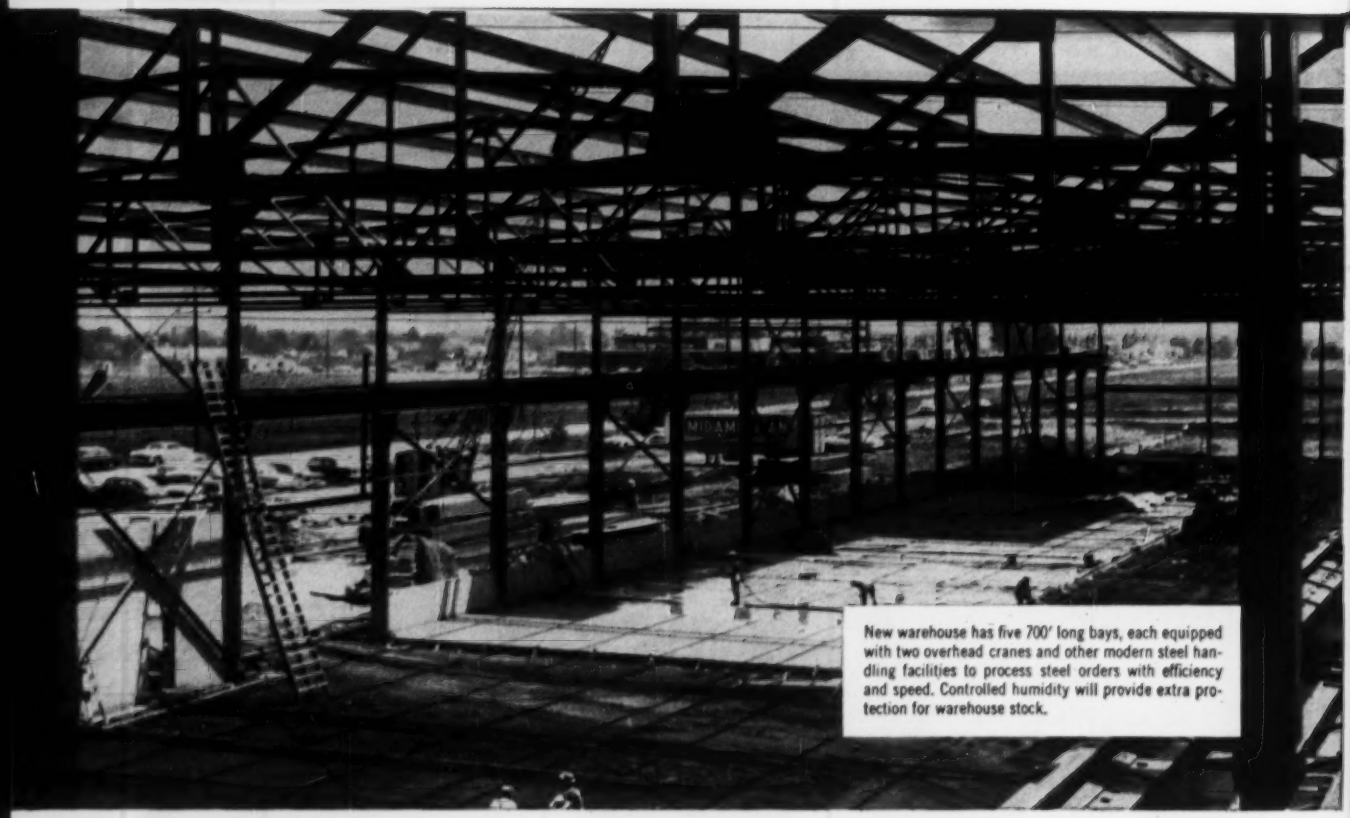


TUFCOR ELIMINATES MEASURING AND CUTTING. Sheets arrive at the job site conveniently bundled and precut to fit steel framing. Actual job photo shows Tufcor sheets are easy to handle, easy to weld in place. The minute Tufcor sheets are down, they create a safe, strong, incombustible platform, protect workmen above and below the steel decking.

15 MILES FROM TIMES SQUARE, New York's new $90 million "Terminal City" at International Airport will feature an eleven-city-block long International Arrival Building and adjacent Airline Wing Buildings, individual airline terminal buildings, seven and one-half miles of taxi-ways, and ten miles of two-lane roads! This modern, efficient air terminal will be the world's largest. Operators: The Port of New York Authority. *Architects* for the International Arrival Building: *Skidmore, Owings & Merrill*, New York City. *General Contractors: Cauldwell-Wingate Company*, New York City.

HIGH STRENGTH TUFCOR FORMS A TIGHT, solid, *level* base for concrete, helps eliminate costly clean-up on floors below. Elimination of forms speeds concrete placement. End result: a rigid and permanent roof or floor slab with unsurpassed strength. Tufcor can also be used for wall panels and as a concrete form for bridge floors and pipe tunnels.



New warehouse has five 700′ long bays, each equipped with two overhead cranes and other modern steel handling facilities to process steel orders with efficiency and speed. Controlled humidity will provide extra protection for warehouse stock.

Junior Beams as roof purlins speed erection of ultra-modern A. M. Castle & Co. steel warehouse

Two hundred tons of 10″ lightweight J&L Junior Beams are used as roof purlins in the new $4,500,000 Franklin Park, Ill., warehouse of A. M. Castle & Co., nationally known steel distributor.

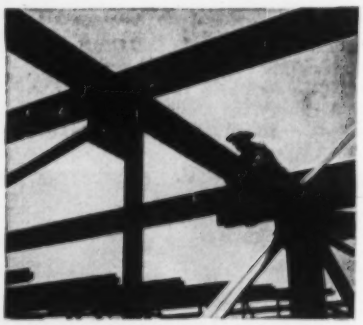
Erection is simple and fast. Junior Beams are cut to length and punched for bolts prior to arrival on the job. Their light weight makes them easy to raise and position. Connections are made with end plates and high tensile bolts.

This ultra-modern warehouse provides an outstanding example of one type of structure where J&L Junior Beams are employed to advantage. Other applications include almost every type of light occupancy buildings. Architects and builders use Junior Beams to develop functional, permanent, safe structures that are low in over-all costs.

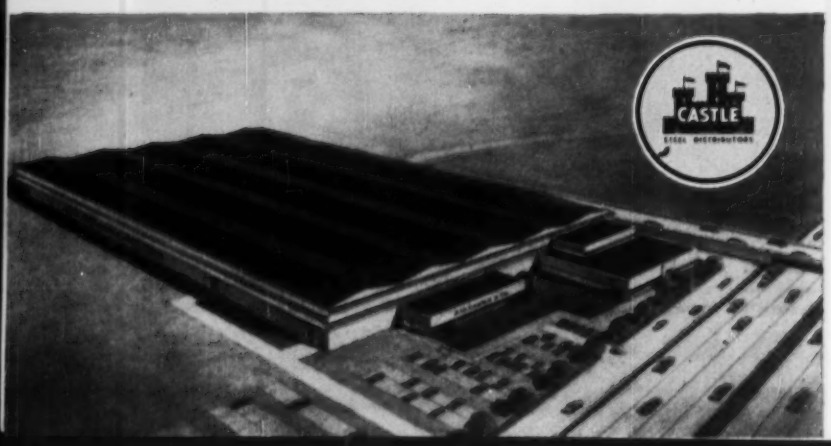
Find out more about them today. Write for a free copy of our technical literature on J&L Junior Beams.

J&L STEEL

Jones & Laughlin
STEEL CORPORATION · PITTSBURGH



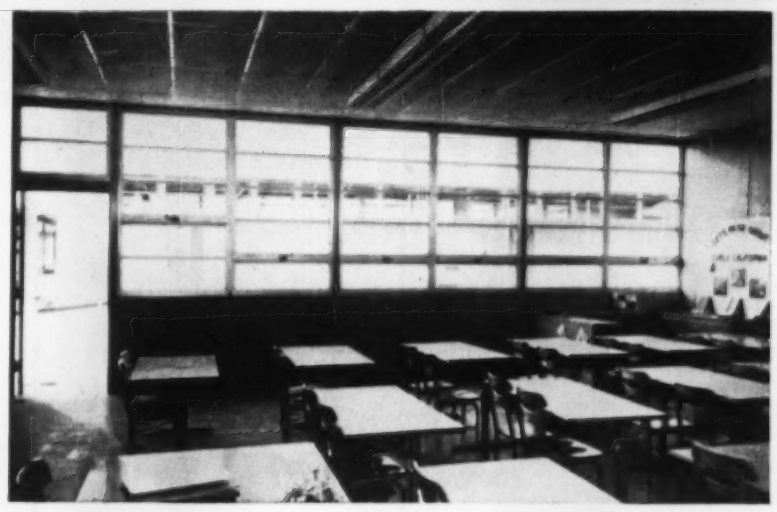
The Junior Beams are installed on 8′ centers over 24′ spans. To save steel, 9 lb., 10″ Junior Beams are cantilevered beyond the main trusses.



Over 2,200 tons of structural steel, fabricated and erected by Allied Structural Steel Companies, are being used in this new $4,500,000 steel warehouse at 3400 North Wolf Road, Franklin Park, Illinois.

ARCHITECT AND BUILDER:
Clearing Industrial District, Inc.
Architect, J. S. Cromelin
FABRICATORS: Gage Division
Allied Structural Steel Companies
ERECTORS: Industrial Construction Co.
Division of Allied Structural Steel Companies

see our catalog in SWEET'S



Metal Prefabs Fill Classroom Need

The Calcor Corp., Los Angeles, has introduced a prefabricated metal portable classroom building. In a practical speed test made necessary by San Bernardino's pressing need for space, this year 38 of the units went up on eight sites in 90 days. Ready for occupancy, cost cited was $10.50 per sq ft.

Framed in steel and bolted to concrete slab foundations, the units are enclosed by insulated sandwich-type wall panels and steel roof panels. Doors, windows, flooring, acoustic ceiling and some utilities are included in the package. Three standard units are : a 28½x32-ft classroom, 24x32-ft toilet room and 40x32-ft kindergarten room. Four pickup points are designed into the frame as a portability feature.

The wall panels are 20-ga steel facings with a core of glass fiber. Fabricated with variable height and 4-ft width, they interlock along the edges to provide shear resistance to wind and earthquakes. Windows are extruded aluminum awning-type with aluminum-angle trim inside. Doors are hollow metal.

The roof is a standing-seam steel deck with interlocking ribs 16 in. c-c. Spanning 12 ft, the panels support suspended acoustic ceiling of glass-fiber boards. The ceiling boards can be removed individually to gain access to the attic space. Adding more insulation to that furnished by the ceiling and the ventilated attic space, the roof is coated on top with aluminum asbestos.

Included with the buildings are individual, gas-fired forced-air heating, fluorescent lighting, asphalt-tile flooring and aluminum-framed chalk and tack boards.

Architectural consultant to the manufacturer was Earl Heitschmidt, of Los Angeles. Calcor Corp., 1620 N. Spring St., Los Angeles 53, Calif.

Diesel Power Units Added To Two Models of Grader Line

Huber-Warco has announced the addition of Cummins diesel-power units to its line of 6-D and 7-D series motor graders, with torque converter and full-power-shift transmission. The models carrying the new power are the 6-D2, powered by a 125-hp Cummins, and a 7-D2 powered by a 150 hp engine. The two models are similar in design to the 6-D and 7-D which carry General Motors diesels. Like the previous models, both new models feature a combination of torque converter and full-power-shift transmission to yield advantages of more usable power, increased ease of operation and positive protection for all machinery. Huber-Warco Co., Marion, Ohio.

(*New Products continued on page 74*)

Frameless Semi-Dump Trailer

Production of a new frameless, front-mount hoist, semi-dump trailer, has been announced by Cook Bros. Called the "Stabalift", it is capable of hauling a 20-ton payload. Stability is obtained by means of a tricycle suspension and by immobilization of the trailer springs during the final period of the dumping cycle. A welded steel channel encompassing the sides at midpoint increases body strength; elimination of the frame increases payload capacity. Cook Bros. Equipment Co., Los Angeles, Cal.

Higher Lift Obtained for Tractor Shovels

Gondolas and high-sided trucks can now be loaded directly with Michigan tractor shovels fitted with a new high-lift bucket.

Designed for the Michigan Model 175A tractor shovel, the new attachment increases dumping height of the bucket by 3 ft 7 in. It raises the lower edge of the bucket to 12 ft 1 in. Clark Equipment Co., Construction Machinery Div., Benton Harbor, Mich.

Fluid Monitoring Device Features Dual-Beam Unit

The newly developed Turbistat is a dual-beam instrument that enables continuous monitoring of turbidity in fluids and measurement of suspensions as low as 0.05 ppm, according to the maker.

The unit operates on comparison of light scattered by suspended particles with light transmitted by the fluid. It can be coupled to a side stream or used directly in streams up to 3 in. in diameter. Baird Associates-Atomic Instrument Co., Cambridge, Mass.

Diatomaceous Earth Filter Features Turbo-Jet Washing

Commercial production of a new diatomaceous earth-type filter is announced. Its vertical tank incorporates two new features: a built-in turbo-jet backwashing arrangement, using less than one-third the amount of water for cleaning its elements as compared to sand filters; and a baked-on plastic coating inside.

According to the manufacturer, the largest of their new Centri-Mite BF

Wedge-Lock Road Forms for Speed, Durability, Low Cost

A new line of general-purpose road forms is now available in both single- and double-wedge lock types. The forms feature special alloy steel construction electro-welded for extra strength and long service life, according to the manufacturer.

Tapered sliding lock joint connections are reputed to assure quick, positive alignment. Lock joints also reinforce form treads at joints and prevent tread distortion even under heavy loads. General Road Machines, Inc., Niles, Ohio.

Contractor's Pump Is Smaller As Performance Increases

A new 6-in. contractor's pump gives increased performance with a decrease in size and weight, the manufacturer claims.

The pump, Model 90-M, features dual volute priming action which assures fully automatic priming. A top entrance suction connection is provided for dependability, and the water tubes of the pump will easily pass a 2-in. solid sphere. The machine is powered by a 244-cu-in. engine developing a constant 55 hp at 1800 rpm, and is available with skids, steel wheels or pneumatic tires. Pump Div., Construction Machinery Co., Waterloo, Iowa.

Rotary Plow Attaches to 4-Wheel Drive Truck

A new rotary snow plow for 4-wheel-drive trucks, for state, county and municipal snow removal, is announced by Wm. Bros. Called the Bros Model B Sno-Flyr, the plow is said to be suitable for any 4-wheel-drive truck in the 17,000-lb gross vehicle weight range. It is front-mounted by a universal hitch that permits interchange with push plows.

The model has a capacity of 20 tons of snow per minute, casting distances up to 75 ft. Loading chute permits rapid loading out to trucks in crowded downtown or urban streets. The casting chute rotates 360 deg to control placement of snow in adjacent areas and a cap on the casting chute controls the height of the snow stream being ejected.

Cutting width of the plow is 8 ft. Wm. Bros Boiler & Mfg. Co., Road Machinery Div., 1057 Tenth St., S.E., Minneapolis 14, Minn.

The DEW Line (distant early warning line) is over 1000 miles from major sources of supply. Therefore, great reliance must be placed on equipment. That's why Le Roi compressors and Le Roi-Cleveland air tools, world-famous for dependability, were selected to help rush this important project to completion.

Dozens of Le Roi Compressors Defy Arctic Blasts on DEW Line

More than 1000 miles from major supply centers, Le Roi Compressors and air tools work around the clock, rushing completion of this major project.

Air power supplied by dependable Le Roi compressors is helping to build the DEW Line — a system of radar stations located in the icy waste lands of the Arctic. Thousands of tons of equipment have been flown into this white frontier land by the U. S. Air Force or landed on Arctic beaches by U. S. Navy convoys.

Construction activity is now moving at a fast pace. Soon the severe Polar winter will close in on the men and machines. Violent storms will sweep the area while temperatures plunge to 60° below zero. That's why only job-proven construction equipment is used on this important project.

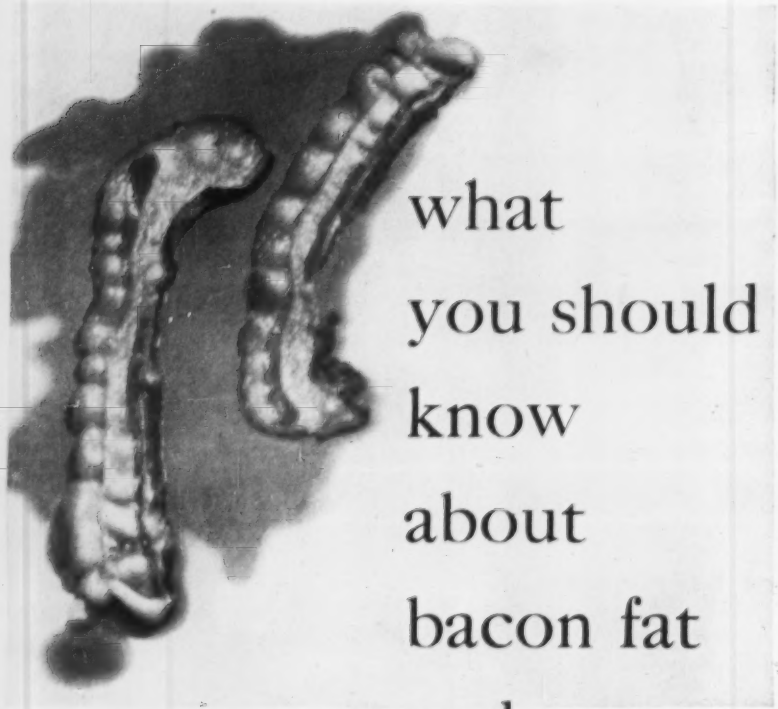
Le Roi air compressors are designed and built to withstand the rugged, adverse conditions of the Arctic. These tough units will produce plenty of air power to operate tools and machines in this bitter land. Trouble-free and easy-starting, Le Roi air compressors, and efficient Le Roi-Cleveland air tools are now helping to complete this enormous job on schedule.

The Distant Early Warning Line, called DEW Line by the men on the northern frontier, will permit advance warning of any enemy plane attack approaching over the North Pole region. DEW Line radar stations will be able to keep day and night watch over the cold Polar sky. At the same time, radar stations along the Mid-Canada and Pine Tree Lines, thousands of miles further south, scan the skyway approaches to U. S. and Canadian homes.

Design experience pays off. Le Roi has been building heavy-duty engines for more than 40 years and applying them to portable compressors. Today's Le Roi compressor with its matched engine and compressor-unit, all built by the same manufacturer, is the significant result of many years of engineering research and development work by Le Roi engineers and field technicians. That's why you find these machines on the DEW Line — and that's why you find them delivering many years of dependable service to contractors and other equipment users in everyday construction work.

C-177

LE ROI Division of Westinghouse Air Brake Co., Milwaukee 1, Wisconsin, manufacturers of Cleveland air tools, Tractair, portable and stationary air compressors, and heavy-duty industrial engines. Write us for information on any of these products.



what you should know about bacon fat and Albanene®

Here's the buying information you should have to get the *best* value when you buy tracing paper.

1. **The usual way** of "transparentizing" tracing papers is with waxes or mineral oils—much the way bacon fat makes a paper towel transparent. Eventually, these oily fluids "leak" out—leaving the paper opaque and useless for reproductions.

   Result: Valuable drawings on ordinary tracing papers eventually become yellow or brittle—lose their reproduction qualities. And, these days, replacements often cost twice as much as the originals.

2. **The K & E way**—Albanene tracing paper is made transparent with an inert synthetic resin which is chemically stable . . . can't leak out—ever!

   Result: Albanene stays transparent . . . stays strong . . . protects every nickel you invest in time and talent working on it.

   Important: During manufacture, constant testing *guarantees* uniformity as well as pencil taking and erasing qualities. The very qualities that have made Albanene—America's best selling tracing paper.

Try Albanene Today . . . it's available in 3 weights and in rolls, sheets or pads. Try it now . . . it's the best value you can buy!

89 YEARS OF LEADERSHIP

In equipment and materials for drafting, surveying, reproduction and optical tooling . . . in slide rules and measuring tapes.

KEUFFEL & ESSER CO.

NEW YORK • HOBOKEN, N. J. • Detroit • Chicago • St. Louis • Dallas • San Francisco • Los Angeles
Seattle • Montreal

series measures only 6½-ft high with a 36-in. diameter. Its flow of 343 gpm can only be matched by a battery of four sand filters, of 72-in. diameter, according to the manufacturer.

Intermediate sizes, down to 20-in. diameter, are also available. The filters are recommended for commercial swimming pools, municipal water supplies and industrial use. SWIMQUIP, INC., 3301 GILMAN RD., EL MONTE, CALIF.

Three-Boom Drill Jumbo Cuts Time, Cost by 50%

Development of the first completely air-operated three-boom mining drill jumbo has been announced by Thor, whose engineers say it will effect time and cost savings up to 50%.

Biggest single tool or machine ever built by Thor, the new jumbo is claimed to be at maximum efficiency in an area as large as 18 ft wide, 10 ft high. The machine weighs 7,800 lb completely equipped with drifter rock drills and mountings. According to the manufacturer, the operation of the machine has been simplified to the point where one man can work the three booms without leaving the air controls.

The booms can support either power feed, chain feed, or air-bar feed mountings. THOR POWER TOOL CO., CHICAGO 2, ILL.

Low-Cost Flow-Rate Indicator Gives Uniform Rate Accuracy

An inexpensive flow-rate indicator has been developed by Fischer & Porter for use with its turbine-type primary metering elements. The "Industrial Logarithmic Panel Indicator" converts output signal of the turbine meter into a series of pulses of constant amplitude at a frequency equal to turbine meter output and, therefore, proportional to volumetric flow rate.

Pulses are integrated into a dc milliameter that gives an indication proportional to frequency and hence to flow rate. A shaded pole panel meter with a logarithmic characteristic provides uniform rate accuracy of 2% at a short-term repeatability of 0.5% of rate. FISCHER & PORTER CO., HATBORO, PA.

Replaceable Digger Teeth Made to Fit Most Machines

The manufacturer says that completely new design principles have been used in the Bulldog replaceable digger teeth for shovel dippers, backhoe buckets, dragline buckets, clamshell buckets and loader buckets.

The tooth has only three parts: A uni-

Costs of city work seem too high?

LOOK HOW SANGAMO CONSTRUCTION CO. CUTS THEM

This well-known 30-year-old Springfield (Illinois) firm, a year ago, had a problem common to most city-area contractors. Moving costs and traffic slow-downs were taking much of the profit out of their municipal work. Small, extra, one-day or weekend jobs, which *could* have built income, often couldn't be handled because their equipment was either too small or too big. Sangamo, however, found a solution. They bought three Michigan Tractor Shovels.

Drive, turn non-stop on narrowest city streets

All these units can be on their way to any kind of loader job in minutes. "These rigs go anywhere," says Clyde Turner, one of Sangamo's job superintendents. "They can run three or four blocks, through auto and truck traffic, in a minute or so. Twenty-seven miles takes only an hour. Rubber tires don't tear up asphalt or oil-mat pavement. They can even go up on a sidewalk without breaking it or the curbing. And our Model 75A's (which are 6' 8" wide and 16' 10" long) can turn around non-stop on the narrowest city streets."

Does job of bigger machines setting 12 inch sewer pipe

Often, one of the Michigans is assigned to a major job where maneuverability is vital in speeding completion. Preceding photograph shows typical task of this type—laying eight miles of 8, 10, and 12-inch sewer pipe for the city of Decatur (Illinois). Daily—almost hourly—this Model 75A shuttled between *three* crews. Tasks included pushing spoil away from trencher . . . backfilling . . . transporting and laying pipe. At times, it set manholes weighing 1200 to 1500 lbs per ring section. Biggest advantages proved to be speed (a typical half-mile trip took 75 seconds) . . . rugged construction (in a summer of work, no time was lost from the job for repairs) . . . planetary axles (which eliminated all axle breakage despite rugged lifting demands).

Carries 1800 lb water main section

Bigger loads have been no problem for the Michigans, either. Above, the second of Sangamo's 80 hp Model 75A's carries an 1,800 lb, 18 ft section of 20 inch water main. This unit *can* lift 8,000 lbs while standing still . . . can carry 4,000 lbs at 4 mph.

Clears, loads 1,000 yards of rubble in 1½ days

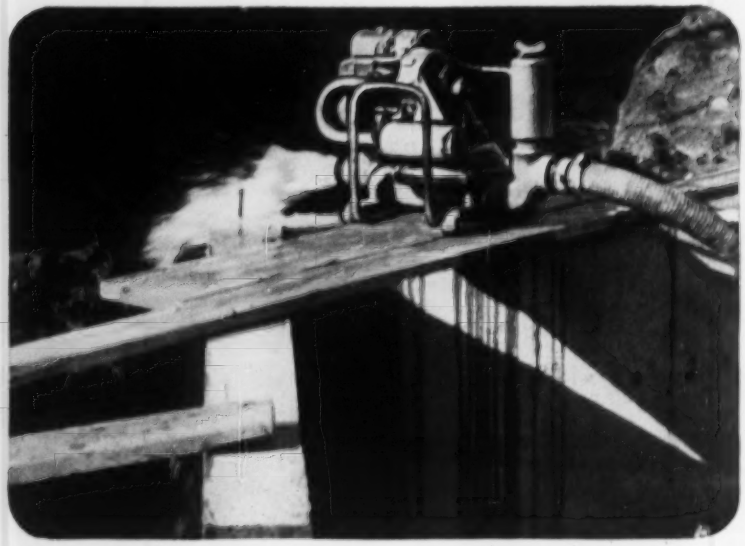
Sangamo's third Michigan Tractor Shovel, a 95 hp, 1⅝ yard Model 125A, also handles assignments where speed is important. Here it's on a historical job in Springfield—clearing the wreckage of Illinois' first governor's mansion to make way for a parking lot. Entire 1,000 cubic yards of rubble and dirt was piled and loaded out in 1½ days. Sangamo Construction bought this machine, their first Michigan Tractor Shovel, after having it demonstrated (to quote Company President, Bill Kewley) "on the toughest tractor shovel work we could find—digging up wet rocky ground to improve drainage around a Springfield sewage treatment plant. Later," Kewley continues, "it proved so handy and so dependable, all our crews wanted one. So, in 5 months, we bought our second Michigan, and, 3 months later, our third."

Stockpiling gravel is another job for the busy Model 125A. While at this city-located yard, rig sometimes loads trucks and railroad cars, feeds the crusher, does cleanup. Its standard 1⅝ yard bucket, incidentally, is interchangeable with 2 yard light-material bucket. The model 75A's standard 1 yard bucket inter-

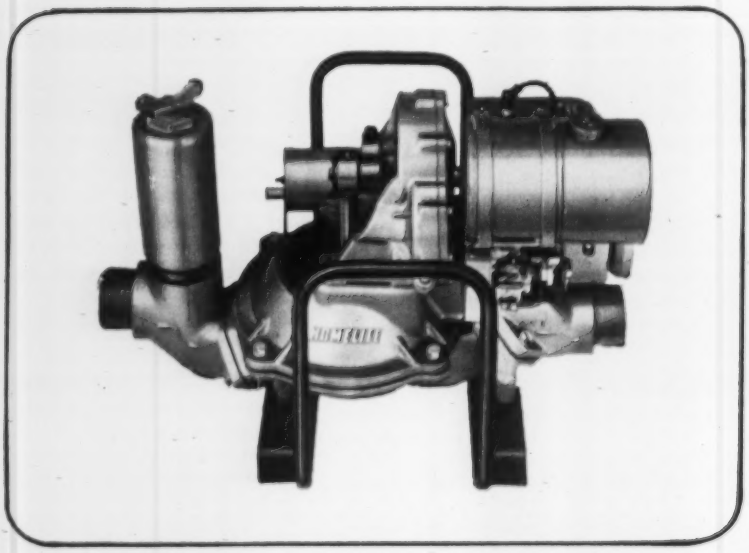
changes with ¾ and 1½ yard sizes. Both models can also be equipped with crane hooks, fork lifts, backfiller blades, scarifiers and root rakes. For small jobs, you can get a Michigan Model 12B with 6, 10, 15, 20, or 27 cubic *foot* capacity . . . for big jobs you can get a Michigan Model 175A with 1⅝, 2, 2¼ (standard), 3 or 5 cubic *yard* capacity.

Michigan is a registered trade-mark of
CLARK EQUIPMENT COMPANY
Construction Machinery Division
2401 Pipestone Road
Benton Harbor 35, Michigan

CLARK® EQUIPMENT



It's here!
The new heavy-duty diaphragm pump that's light enough to carry



Here's the diaphragm pump that goes most easily to the job and does more when it gets there. Specifically designed for continuous, heavy-duty work, this Homelite pump will dewater an area at a 5000 g.p.h. clip, then keep right on going to handle seepage in the thickest mud, muck and sand. Yet, because it weighs only 120 pounds, it gets to the job fast . . . even over the roughest terrain.

The entire unit is built for long, trouble-free operation. Manual throttle control adjusts engine speed for full-capacity pumping or handling small seepage flow . . . gives greater fuel economy and prolongs engine life. Ball and roller bearings protect engine and pump from excessive wear. Totally enclosed reduction gears run in oil. Tough, oil-resistant diaphragm can be easily replaced in ten minutes right on the job.

For more information or a demonstration on your job, write or call your nearest Homelite representative.

NEW HOMELITE
Carryable
DIAPHRAGM PUMP

Model 20DP3-1 has guaranteed total lift up to 28′ and total head up to 50′, including friction.

HOMELITE

A DIVISION OF TEXTRON INCORPORATED
1110 RIVERDALE AVENUE
PORT CHESTER, NEW YORK

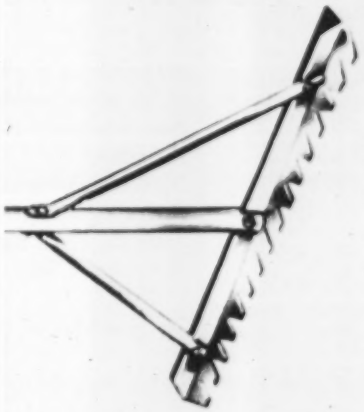
versal weld-on adapter, easily attached by using the old tooth as a base; an easily changed replaceable tip, and two positive-lock pins for securing the tips to the adapter. The manufacturer claims that using the old tooth as a base for the universal weld-on adapter eliminates the expense of a conventional adapter or new tooth and saves up to 65% on tooth maintenance costs.

Adapters are made in 15 different widths, from 2¼ in. to 7 in., and are said to fit all popular makes of machine. Allied Steel & Tractor Products, Inc., 7835 Broadway, Cleveland 5, Ohio.

Lightweight Winch Hoist Has Interlocking Pawl System

A lightweight, 1½-ton-capacity unit ratchet lever hoist is being offered with a standard lift of 30 ft.

The new Lug-All Model 3000-30 weighs only 13¾ lb, and includes a highly flexible aircraft cable to permit lifting, pulling, or lowering a 1½-ton load a distance of 15 ft, or a ¾-ton load a distance of 30 ft, using cable in a single line. Features include a main frame of high grade aluminum alloys oiled-for-life bearings, stainless steel springs, three hooks and a built-in pulley that can be used as a snatch block in close quarter work. A safety handle bends before the unit can be overloaded to prevent costly accidents, an interlocking pawl system securely locks the load, and free release only operates under no-load conditions. The Lug-All Co., Haverford, Pa.



Asphalt Lute and Rake

A combination asphalt lute and rake, called the Lute-O-Rake, has been placed on the market. One edge of the T-shaped extruded aluminum blade is straight while the other has teeth like a rake. Handles come in 7- and 10-ft lengths and blades in 30- and 36-in. widths. For added strength, internal tube reinforcement is placed at all stress points. Miller Spreader Corp., 4020 Simon Road, Youngstown, Ohio.

Waxy Coating for Forms Releases Easily, Is Versatile

A new coating that is said to solve the problem of sticking materials is marketed under the tradename, "Powerfilm." The coating is said to resist the sticking of concrete, clay, moist dirt and other materials.

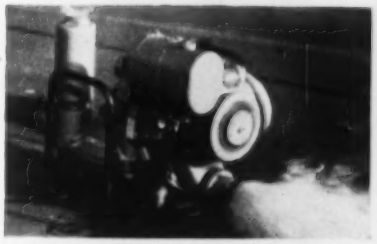
The manufacturer states that the material is particularly effective on concrete forms, inside dirt haulers, conveyor belts, transmit-mixer trucks, snow plows and has many other uses. The material is sprayed, brushed, or wiped on and dries quickly to form a thin waxy coating. It may be applied to wet surfaces since it chemically displaces water, and contains a rust preventive to prevent harm to surfaces. The Thomas Co., 1654 Hennepin Ave., Minneapolis 3, Minn.

Versatile Pump Designed For 200-Foot Operations

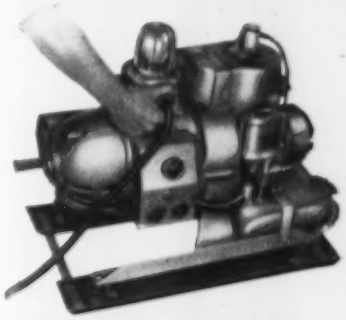
A deep-well working head, designed to pump water from depths of 22 to 200 ft, has been added to the Rapidayton line of pumps and water systems.

The pump has a 6-in. stroke and delivers up to 462 gal per hour. Outstanding features, according to the

CHOOSE
from a full line of
HOMELITE
Carryable
Construction
Equipment



SELF-PRIMING CENTRIFUGAL AND DIAPHRAGM PUMPS
Sizes: 1½" to 3" — capacities to 15,000 g.p.h. for dewatering and water supply.



ELECTRIC GENERATOR SETS FOR TOOLS AND LIGHTS
Complete range of sizes and voltages up to 5,000 watts.

LIGHTWEIGHT POWERFUL ONE-MAN CHAIN SAWS
Complete line of saws with clearing and brushcutter attachments for every woodcutting job.

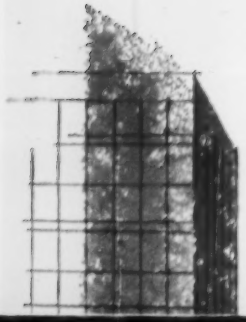
HOMELITE
A DIVISION OF TEXTRON INC
PORT CHESTER, N. Y.

Public works budgets

As a planner of public works, you know what it means to be in the middle, between a demanding public on one side and budgets shrunk by increasing costs on the other.

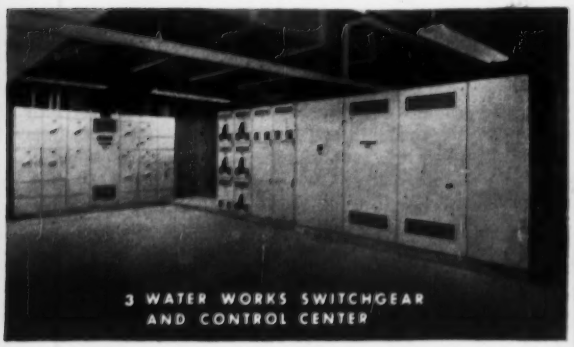
Westinghouse can help you get the most out of each shrinking dollar in a realistic way. First, by providing everything you need electrically in one integrated line. It's simpler, surer, that way.

Further, by making available a specialist engineer on problems of power distribution for all kinds of

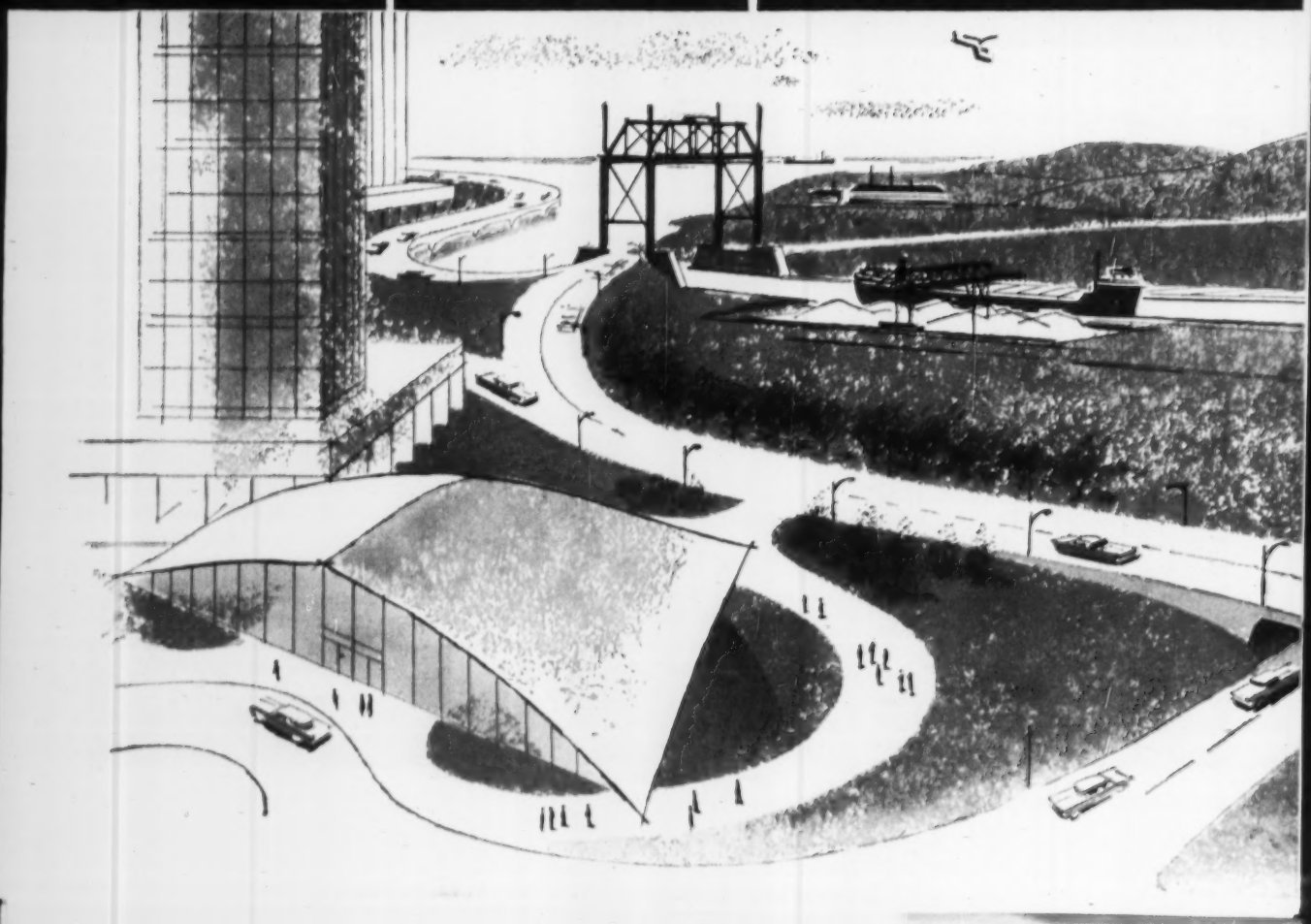


1 SEWAGE SYSTEM SWITCHGEAR — CONTROL CENTER

2 CONTROL CENTER FOR SEWAGE PLANT



3 WATER WORKS SWITCHGEAR AND CONTROL CENTER



can be stretched electrically

projects, motor applications, controls of every type, interior or area lighting, street, highway, and interchange lighting . . . anything electrical.

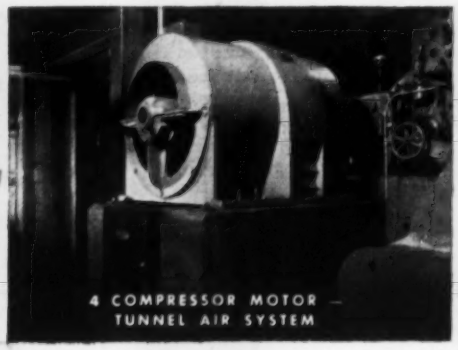
There is a Westinghouse electrical construction engineer in your area who will head up a team of such specialists when you or your consultants want help on electrical specs that will stretch the budget. He's as close as your telephone. Call him. Westinghouse Electric Corporation, P.O. Box 868, Pittsburgh 30, Pa.

J-94063

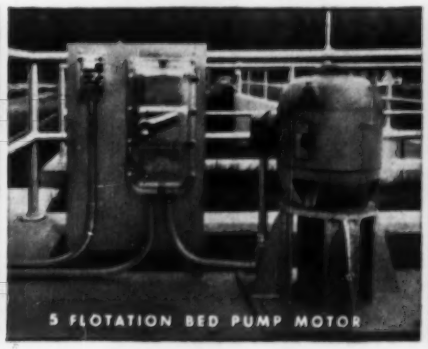
1. This close-coupled assembly of Westinghouse "drawout" switchgear and control center serves the modern sewage treatment plant at Bloomsburg, Pa. 2. Another control center at Bloomsburg. All units were factory-assembled and pre-wired. 3. Incoming power for the Houston, Texas, water purification plant is received in the 1000-kva, 4160/480-277 volt power center at right. Power control at left has 480-277 volt power section, 150-kva dry-type transformer and a 120/208 volt lighting section. 4. 1000-hp Westinghouse motor driving a compressor for vehicular tunnel air system. 5. Vertical-type circulating pump for flotation beds in a Cincinnati, Ohio, sewage plant driven by Westinghouse Life-Line® motor. 6. Brilliant nonglare lighting in Bank Street Tunnel, Seattle, Washington, using Westinghouse fluorescent fixtures and tubes.

WATCH WESTINGHOUSE!

COVER THE PRESIDENTIAL CAMPAIGN ON CBS TELEVISION AND RADIO!



4 COMPRESSOR MOTOR — TUNNEL AIR SYSTEM



5 FLOTATION BED PUMP MOTOR

6 TUNNEL LIGHTING SYSTEM

How to prepare an un-smooth concrete base for decorative tile...

Use FLINTMASTIC† for underlayment

You need a perfect base for laying resilient floor coverings. Otherwise, imperfections show through to the surface.

Flintmastic will provide the most satisfactory, most economical asphalt mix for underlayment. It's resilient, resistant to shock and moisture. Insulates against cold and noise. And it can be finished to the smooth evenness you require . . . quickly and easily.

And *here's* an important point to remember about Flintmastic. It is made by mixing cement, sand and famous Flintkote *clay type* asphalt Flooring Emulsion.

This specification mix provides a better asphalt mastic, thick or thin. Ideal for underlayment.

There's a specification, too, for heavy-duty floors, loading platforms, trucking aisles and the like. Ask for complete information about smoothing up old floors with Flintmastic. Write today.

†Trademark of The Flintkote Company

FLINTKOTE

THE FLINTKOTE COMPANY, *Industrial Products Division*, 30 Rockefeller Plaza, New York 20, N. Y.

BOSTON • CHICAGO HEIGHTS • DETROIT • LOS ANGELES • NEW ORLEANS • PHILADELPHIA

In Toronto, Ontario: The Flintkote Company of Canada, Ltd.
In London, England: Industrial Asphalts Company, Ltd.

Three-Way Stumping Tool

Hailed as a new-type stumping block, the equipment above is designed to be used as a digging, splitting or battering-ram tool.

According to the manufacturer, the attachment may cut working time as much as 30% since the block is designed to grip into the stump, preventing unnecessary skidding and wear on the tractor. The action also utilizes and transfers the full inertia and lifting force of the tractor directly into the stump to be removed. This block is manufactured for all sizes crawler-type tractors and may be mounted on any specified land-clearing rake, bulldozer, or angle-dozer blade. Rockland Allied Equipment Co., 3778 W. Colonial Dr., Orlando, Fla.

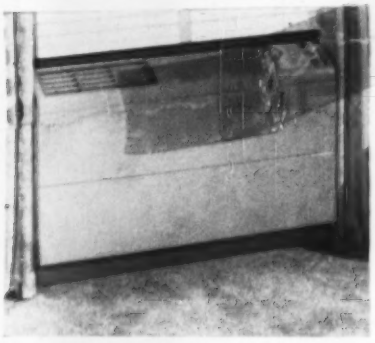
manufacturer, include a pump body cast in one piece which gives unusual rigidity and keeps out dust and sand; machine-cut reduction gears; and automatic lubrication.

The new pump is available with either ½- or ¾-hp heavy-duty motors, 115-230 v, 60-cycle operation. THE TAIT CO., 500 WEBSTER ST., DAYTON 1, OHIO.

Carrier Unveils "Thinnest" Room Air-Conditioner

Carrier's 1957 line of room air-conditioners will include the thinnest ever produced, according to a claim made in a preview of models to be marketed next year. Thickness of the unit, a console-type conditioner, is 12⅛ in. It is 41½ in. wide, 23½ in. high. Designed to permit inclusion of a heating coil to replace an existing radiator, the model is suitable for either new construction or conversion to year-round air-conditioning from existing hot-water or steam heating.

The unit can be installed either



under or in a window. In the latter case it projects about six inches above the sill.

The air duct opening to the outside is 5½ in. high, 24⅞ in. wide. Adjustable louvers direct air flow either upward at 45 deg or downward at 15 deg below horizontal. Air is circulated by a 2-speed manually controlled fan. Sizes available are ¾ and 1 hp. CARRIER CORP., SYRACUSE 1, N. Y.

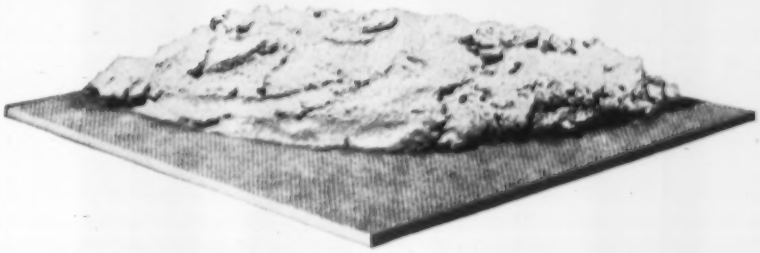
(*New Products continued on page 84*)

Construction Stake

Positive anchoring in any soil or subgrade condition is claimed by Universal Form Clamp Co. for their new construction stake. The stage simplifies placement of footings, curbs, gutters, bracing and screeding.

Constructed of ¾ in. round, cold-rolled bar stock the stakes can be reused indefinitely with the advantages of easy driving, accuracy and less soil-displacement. The short sharp point set on 1 in. centers permits nailing at any point. Standard lengths are 24 in., 30 in. and 36 in.; other sizes available to meet specific requirements. Universal Form Clamp Co., 1238 N. Kostner Ave., Chicago 51, Ill.

2 sides to use... 3 ways to save!



—and you can pour against Masonite Concrete Form Presdwood again and again! No matter which side of these strong, grainless panels you use... no matter how you plan to finish the surface of your cast...you'll get better architectural concrete when you build your forms of Masonite Concrete Form Presdwood®.

These durable panels are structurally uniform, without knots or grain. Yet it cuts and even bends readily using ordinary carpenter's tools. Large 4′ x 8′ and 4′ x 12′ panels create fewer fins. Send the coupon for a free sample.

For painted surfaces

Pour against the screen side. The textured surface left in the concrete forms an excellent bond for paint. Only minimum rubbing required.

For unpainted surfaces

Pour against the screen side. The tiny projections left in the concrete help to form a better "soap"—cut rubbing costs as much as 50%.

For painted or unpainted surfaces

Hand rubbing is virtually eliminated when you pour against the smooth surface of Presdwood...no knots, grain, or blemishes.

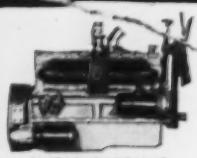
MASONITE PRESDWOOD PRODUCTS

MASONITE® CORPORATION
Dept. ENR-1011, Box 777, Chicago 90, Ill.

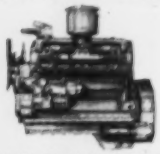
Please send me a booklet and a free sample of Concrete Form Presdwood.

Name .....
Firm .....
Address .....
City ..... State .....
Zone ..... County .....

This is HERCULES MOTORS Today


L-HEAD GASOLINE

OVERHEAD-VALVE GASOLINE


TURBULENCE-CHAMBER DIESEL

DIRECT-INJECTION DIESEL

TURBOCHARGED DIESEL

DEPENDABLE POWER FOR INDUSTRY

TRANSPORTATION AGRICULTURE CONSTRUCTION INDUSTRIAL MARINE OILFIELD

Yes, this is Hercules Motors, today—all types of dependable power for modern industry. The Hercules line includes more than 90 different models of engines and complete power units ranging from 3 to 500 H.P.

An ever-growing list of customers are solving their power problems with these types of Hercules Engines: L-head gasoline, overhead-valve gasoline, natural gas, L.P.G., turbulence-chamber diesels, direct-injection diesels, Turbo-Charged Diesels, marine diesels and complete open, closed and base type power units.

Write for more information on any of these dependable power plants. Our sales-engineers will be happy to help solve your power problems. No obligations, of course.

L.P.G. OR NATURAL GAS

POWER UNITS

MARINE DIESELS

HERCULES MOTORS CORP.

Engine Specialists Since 1915 • Canton, Ohio

. . . New Products

Accurate Pocket-Size pH Meter Is Dependable, Easy to Operate

A pocket-size pH meter for acidity and alkalinity measurements, which the manufacturer says is accurate, dependable, and easy to operate, is now in production.

Using a combination electrode, the new low-price meter has a range of from 2 to 12 pH. The single electrode combines both the reference and glass electrodes and has been especially designed for use with the new "Pocket pH Meter". The instrument also has a "memory" dial for use in standardizing. Power source is flashlight-type batteries. Scientific Instrument Div., Beckman Instruments, Inc., Fullerton, Calif.

Adjustable-Height A-Frame

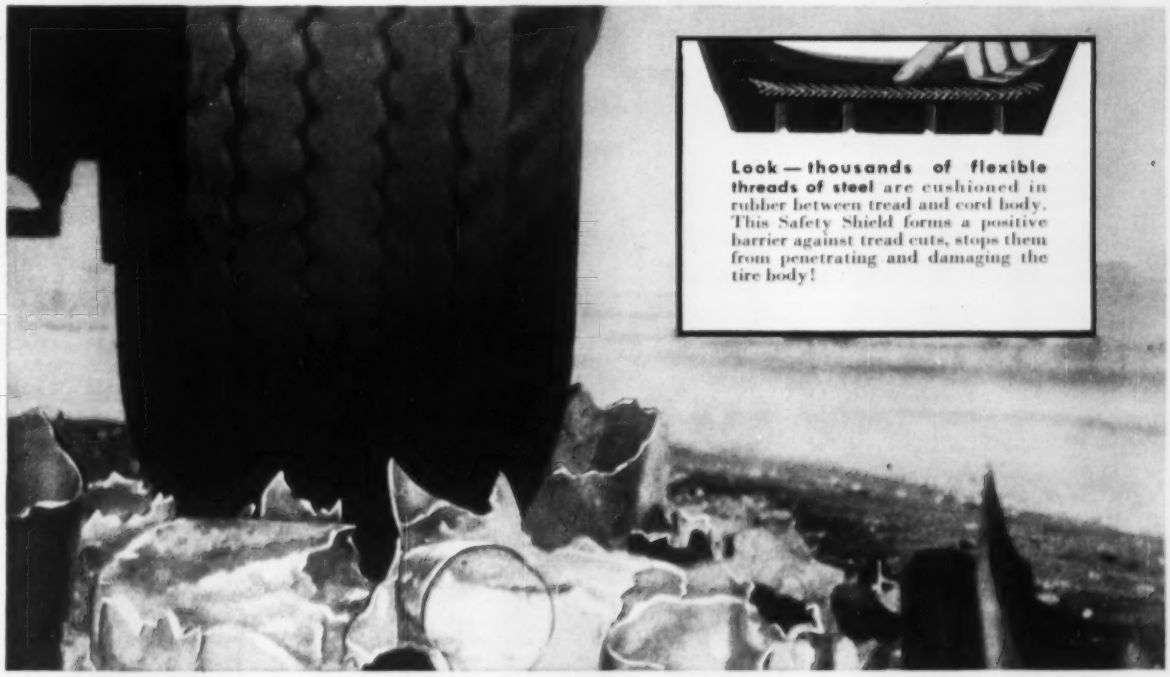
A portable, adjustable-height A-frame, capable of lifting 4,000 pounds, is being marketed by Wallace Products. Weighing 53 pounds, the telescopic legs of the frame can be extended in 6 in. increments to give a working height of 10 ft. For storage and handling, the legs can be folded together to make a unit only 6 ft long. B. E. Wallace Products Co., Exton 20, Pa.

Loader for Small Tractor

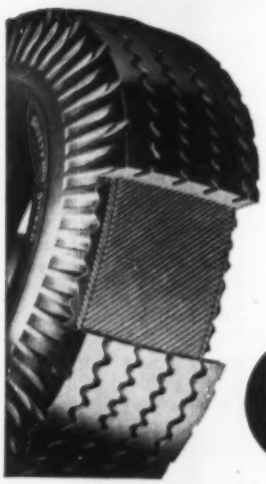
A fast loader for long, non-oscillating track CAT D-2's has been announced by Teale & Co. The attachment, called TL-21, will lift a heaped ¾-yd bucket to a full 9 ft 1 in. at the bucket hinge points in about 6 sec, the manufacturer says. The bucket is said to load faster, rolls back a full 40-deg at ground level for fuller loads and has roll-back action pry-out to assure fast, smooth breakaway. Teale & Co., Box 308, Omaha 1, Neb.

Tread Cuts Are Stopped

by new exclusive SAFETY STEEL SHIELD


Look — thousands of flexible threads of steel are cushioned in rubber between tread and cord body. This Safety Shield forms a positive barrier against tread cuts, stops them from penetrating and damaging the tire body!

U.S.ROYAL Truck Tires



You are looking at an entirely new kind of truck tire. It combines the strength of *steel* with full flexibility, light weight and soft ride—without increased inflation.

Because this new U.S. Royal is *invulnerable* to cuts and ruptures in the tread area, it gives you the longest, most trouble-free service in truck tire history. Because steel cord shields its carcass, it remains undamaged for more safe recapping, making it the most economical of truck tires.

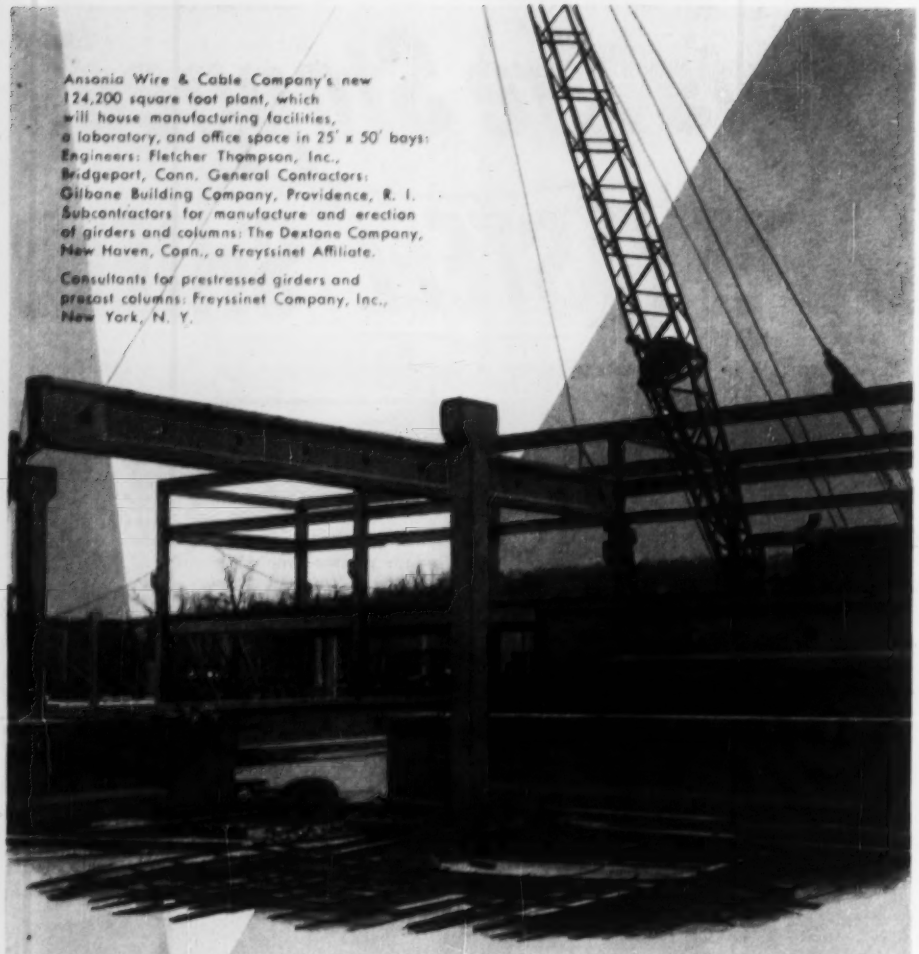
On new U. S. Royals like this, your trucks ride secure from sudden tire failure. Your loads are protected from damage due to accident, from spoilage due to road delays.

You'll find that these new U. S. Royals cost *surprisingly little*. Ask your U.S. Royal Dealer now! And remember you can specify them on any new equipment you buy!

US RUBBER

United States Rubber

ROCKEFELLER CENTER, NEW YORK 20, N. Y. IN CANADA: DOMINION RUBBER CO., LTD.



Ansonia Wire & Cable Company's new 124,200 square foot plant, which will house manufacturing facilities, a laboratory, and office space in 25' x 50' bays: Engineers: Fletcher Thompson, Inc., Bridgeport, Conn. General Contractors: Gilbane Building Company, Providence, R. I. Subcontractors for manufacture and erection of girders and columns: The Dextone Company, New Haven, Conn., a Freyssinet Affiliate.

Consultants for prestressed girders and precast columns: Freyssinet Company, Inc., New York, N. Y.

For **FAST** *Construction of Industrial Buildings . . .*

use prestressed concrete

The Ansonia Wire & Cable Company's new manufacturing plant in Providence, R. I., proves prestressed concrete's advantages over other building methods. Fast erection was a prime requirement on this job—along with modern design and high quality—and only by using prestressed girders, precast columns, and "tilt-up" walls could demanding specifications be met and the bid still be competitive.

There were other important features of the Ansonia Wire & Cable structure significant to industrial plant builders:

- 50′ prestressed concrete girders with 6″ holes provided for present and future service lines. These girders were standard Freyssinet I-Beams.
- girders and precast columns were designed to carry a two-ton concentrated load in addition to the metal deck and ordinary roof loading.
- girders met 5,000 psi specifications and columns 3,750 psi.
- lower insurance rates because of greater fire resistance.

Only experts can provide prestressed concrete quality. Such experts are the Freyssinet Affiliates—each of whom operates a product plant equipped to manufacture *any type or size* of concrete structural unit on universal pretensioning beds. Highest standards of design and quality control during production are assured because each Affiliate retains skilled Freyssinet engineers, who have trained those responsible for producing quality precast products.

Engineers, owners and architects are invited to call the nearest Freyssinet Affiliate, whose sales engineering staff will analyze their job for fast, economical construction in prestressed concrete.

FREYSSINET AFFILIATES

The Dextone Company
166 Chapel Street
New Haven, Conn.

•

Goodstone Manufacturing Co., Inc.
470 Hollenbeck Street
Rochester, N. Y.

•

Formigli Corporation
2050 Locust Street
Philadelphia, Pa.

•

Economy Cast Stone Co.
15 East Franklin Street
Richmond, Virginia

•

Ready-to-Pour Concrete Co.
P.O. Box 1075
Idaho Falls, Idaho

•

Empire Prestressed Concrete of Oregon
9255 N.E. Halsey Street
Portland, Oregon

•

Precrete, Inc.
130-01 Northern Boulevard
Corona, N. Y.

•

Lewis Manufacturing Co.
3044 S.W. 28th Lane
Miami, Florida

•

Precast Concrete Limited
P.O. Box 398
Calgary, Alberta, Canada

•

Schell Industries Limited
Woodstock
Ontario, Canada

•

Pretens, Inc.
Avenida Labra 800
Santurce, Puerto Rico

Publications

Precast stacks—A four-page product folder on the van-Packer Pre-Cast Insulated Stack, contains product information, including advantages and description. It also contains specifications, suggested installation methods and test data. Designed for commercial and industrial applications, the Van-Packer is a cylindrical refractory stack made up of three-foot sections pre-cast of vermiculite and cement. It comes in seven diameters from 10 in. ID to 30 in. ID. Van-Packer Corp., Bettendorf, Iowa.

Electronic test equipment—Test instruments listed in a 40-page booklet include oscillographs, digital computers, galvanometers, signal amplifiers, mass spectrometers and equipment for measuring vibration and pressure. Accompanying picture and brief description of each item in this general catalog is the number of a bulletin covering the item in more detail. Consolidated Electrodynamics Corp., 300 N. Sierra Madre Villa, Pasadena, Calif.

Remote-reading gages—Illustrated 8-page catalog No. 291 describes remote-reading liquid-level gages, including a type that flashes a warning when boiler-water level gets too high or too low. Gages in four pressure groups—from below 900 psi to above 1,500 psi.—are covered. Jerguson Gage & Valve Co., 80 Fellsway, Somerville 45, Mass.

Induction motors—Allis-Chalmers' two-pole squirrel-cage induction motors, 900 hp and larger, are reported in a new bulletin. Construction details typical of the motor include a description of its spiral ventilation system and of measures taken to achieve quiet operation in high-speed machines. Allis-Chalmers Mfg. Co., 1018 S. 70th St., Milwaukee, Wis.

Hydraulic switch—Infilco's Bulletin 1215 describes its new A-D hydraulic switch for the control of hydraulic operated valves. The switch is a pneumatically actuated dual diaphragm, four-way control valve which can be mounted close to cylinders. Infilco, Inc., Tucson, Ariz.

Public relations—Contractors faced with a public relations problem in the performance of blasting operations may be interested in a 25-minute motion picture now available from Atlas Powder Co. A color film describes precautions that blasters take to prevent accidents and protect property, shows modern methods of controlled blasting. It is felt that by showing the film to local groups, users of explosives will substantially reduce ill will which seems to arise primarily from a lack of understanding of blasting operations. In addition to the film itself, the company will also provide a kit containing material and suggestions to assist in the successful planning, promotion and execution of a program featuring the film. Explosives Development Sec., Atlas Powder Co., Wilmington 99, Del.

Underground conduits—A new brochure gives information about vitrified clay conduit systems. Of particular interest to industrial designers, the systems offer a solution to the problem of pipe protection through the use of underground installation within clay conduits. Typical specifications are presented, in addition to information on conduit design, insulation and waterproofing. Conduit Div., Stillwater Clay Products Co., 3334 Prospect Ave., Cleveland 15, Ohio.

Handling materials—A 12-page booklet offered by American Tractor contains suggestions on mechanized handling of construction materials. Articles report how contractors are using crawler-mounted TerraTrac fork lifts, with quick-change attachments, to cut handling costs and speed movement of materials in mud, snow and rough terrain. American Tractor Co., Churubusco, Ind.

Blacktop sealer—A new solvent-proof sealer for use on blacktop roads, parking areas and service stations is described in a bulletin. The reinforced copolymer resin sealer offers long-lasting protection from the solvent action of gasoline and oil. The Gilbreth Co., 1211 Chestnut St., Philadelphia, Pa.

Compactors—Many ways in which the six compacting units in the workhead of their multiple compactor may be arranged and rearranged to provide most efficient coverage and consolidation of granular soils, rock, slag, sand or gravel are illustrated in a bulletin by Jackson Vibrators, Inc., Ludington, Mich.

Vertical turbine pumps—A 72-page book, "The Answers to Your Questions About Layne Vertical Turbine Pumps", covers the use of pumps for municipalities, industry and irrigation. Tables, photographs, drawings and charts are included. Layne & Bowler, Inc., Memphis 8, Tenn.

Here are important facts for the "man behind the gun"

This White 18" Dumpy level has

...more of the features you want, yet costs you less!

Before you buy, compare this White Dumpy level with a similar model of any other recognized make. From every standpoint — design detail . . . quality construction . . . work-speeding, life-lengthening features and cost — you'll quickly see why a White's the best buy you can make. It will make your work faster, easier, more accurate. Check this comparison chart:

FEATURES	D. White No. 7080	Instrument A	Instrument B
Magnifying power of telescope	35X	30X	27X
Distance away you can read 1/100 ft. graduation	1200 ft.	1050 ft.	900 ft.
Diameter of objective lens	1.81 in.	1.485 in.	1.69 in.
Field of view (in minutes of arc)	64'	52'	60'
Coated optics	YES	YES	YES
Covered leveling screws	YES	YES	YES
Can you easily replace worn leveling screws in the field?	YES	NO	YES
Sensitivity of level vial (in seconds of arc per 2mm of graduation)	20"	20"	25"
Price — complete with carrying case, tripod and accessories — F.O.B. factory	$315.00*	higher	higher

For complete details on the 18-in. Dumpy level and other equally fine engineering instruments, see your David White dealer, or write direct to David White Co., 517 W. Court Street, Milwaukee 12, Wisconsin.

DAVID WHITE COMPANY

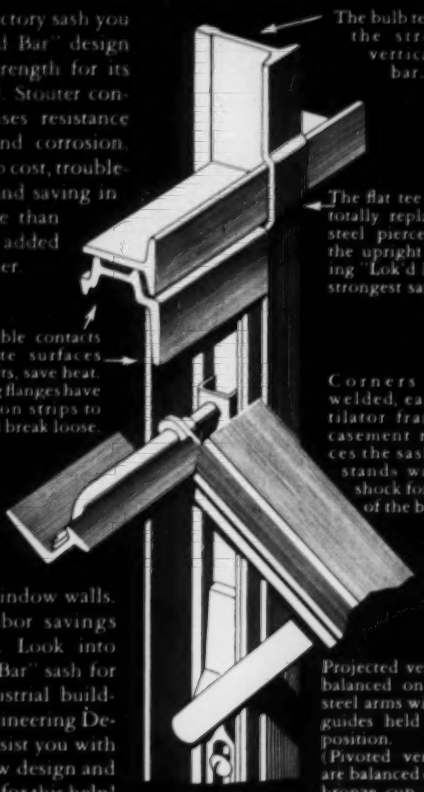
We offer complete, expert repair service on all makes, all types of instruments.

*Price subject to change without notice.

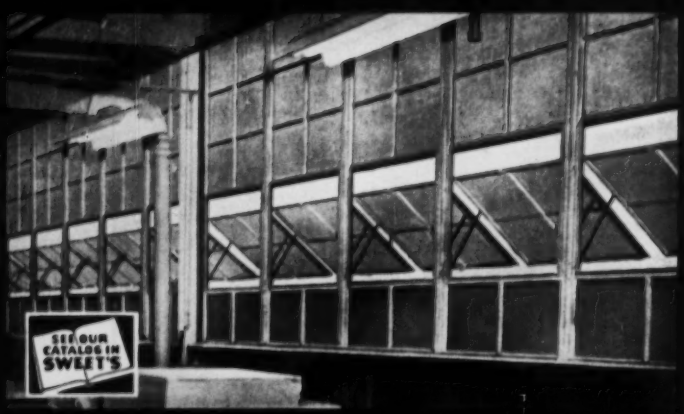
The Name **HOPE'S** *Guarantees*

Lok'd Bar FACTORY SASH

The strongest factory sash you can buy. "Lok'd Bar" design gives greater strength for its weight of metal. Stouter construction increases resistance to wear, tear and corrosion. Saving in upkeep cost, trouble-free operation and saving in heat losses more than return its small added cost to the owner.


The bulb tee makes the strongest vertical sash bar.
The flat tee muntin totally replaces the steel pierced from the upright — making "Lok'd Bar" the strongest sash joint.
Broad, double contacts on accurate surfaces abolish drafts, save heat. Weathering flanges have no tacked-on strips to corrode and break loose.
Corners solid-welded, each ventilator frame and casement reinforces the sash, withstands wind and shock for the life of the building.
Projected ventilator, balanced on strong steel arms with brass guides held in true position. (Pivoted ventilators are balanced on solid bronze cup pivots.)

Engineers like "Lok'd Bar's" extra safety in window walls. Builders find labor savings in installation. Look into Hope's "Lok'd Bar" sash for every good industrial building. Hope's Engineering Department will assist you with detail of window design and installation. Ask for this help!



"Lok'd Bar" means the world's finest factory sash. Ask for Catalog 103L

HOPE'S WINDOWS, INC., *Jamestown, N. Y.*

The Finest Buildings throughout the World are Fitted with Hope's Windows

Men and Jobs

Concrete Industry Board Elects New Officers

The Concrete Industry Board, Inc., elected new officers and directors recently at the annual meeting of the organization in New York City.

Webster J. Caye, Jr., of Caye Construction Co., was named president, succeeding Roger H. Corbetta, of Corbetta Construction Co. Corbetta has headed the CIB since it was founded five years ago as an association of New York area contractors, engineers, materials suppliers and other groups and individuals interested in improving the quality of concrete construction.

Also named were: vice president, George F. Pavrini, of the Pavrini Construction Co.; secretary, William J. McIntosh, of the Portland Cement Association; treasurer, Donald J. Cameron, of the Fireproof Products Co. The nonelective post of managing director will continue to be filled by Adm. John J. Manning (Ret.).

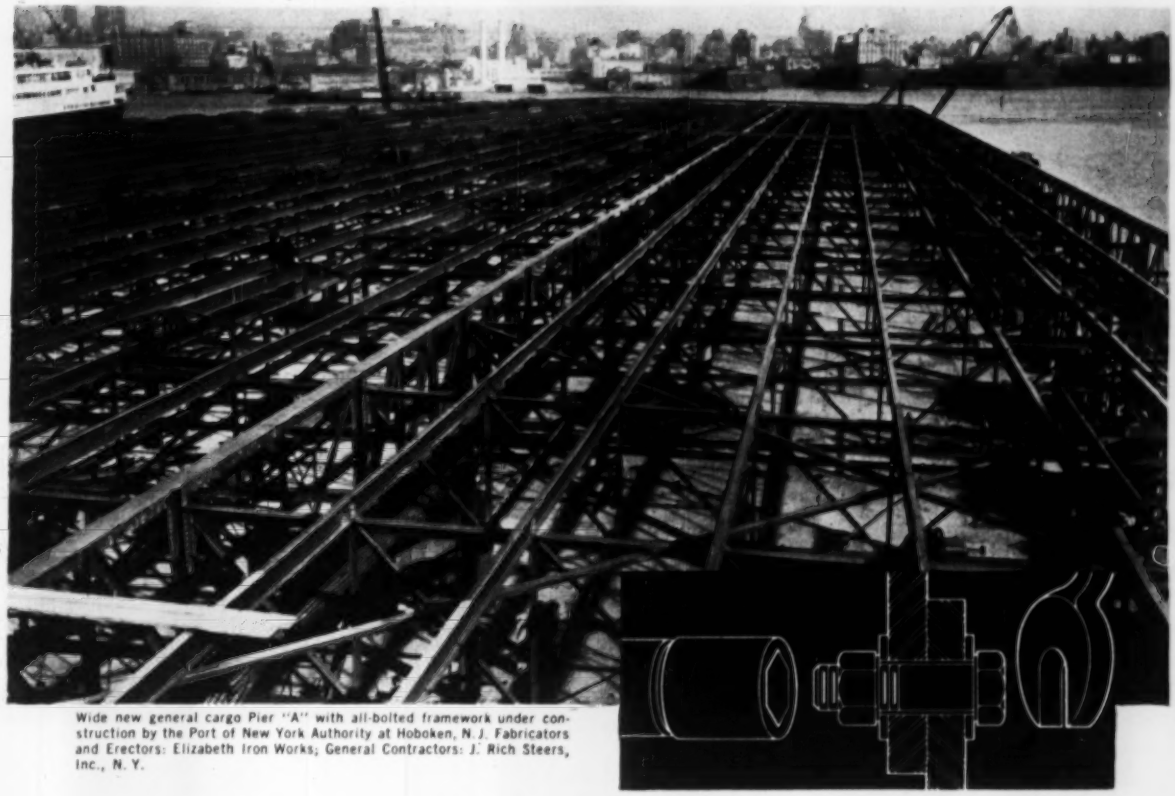
Maryland Port Authority Gets Executive Director

Joseph L. Stanton has been named executive director of the new Maryland Port Authority at a salary of $25,000 a year. A director of public relations for the Baltimore and Ohio Railroad, he will assume his new duties on Nov. 1. A former newspaperman, he became interested in the Port of Baltimore while covering its activities for the Baltimore Evening Sun prior to World War II. After the war, Stanton was appointed director of the Baltimore Association of Commerce import and export bureau. He resigned this position three years ago to join the B&O public relations department, and became its director a year ago.

W. B. Tabler Will Design $15-Million Hilton Hotel

William B. Tabler, designer of the Hotel International at New York International Airport and the Statler Hilton Hotel in Dallas, is commissioned as architect for the $15-million Pittsburgh Hilton. Announced jointly last summer by the Hilton Hotels Corp. and the Equitable Life Assurance Society of the United States, the 17-story 800-room building will be located in Equitable's Gateway Center development in Pittsburgh's "Golden Triangle."

Formerly a company architect for the Statler chain, Tabler now heads his own architectural firm in New York



Wide new general cargo Pier "A" with all-bolted framework under construction by the Port of New York Authority at Hoboken, N. J. Fabricators and Erectors: Elizabeth Iron Works; General Contractors: J. Rich Steers, Inc., N. Y.

BOLTS cut erection time 33%

RB&W High Strength Bolts save weeks on pier framework ...also cut construction costs

ALL connections in the steelwork of the 227,000 sq. ft. Pier "A" at the Hoboken-Port Authority piers were completed by Elizabeth Iron Works within two months. That's a month less than for a similar pier erected the previous year without benefit of high strength bolts. More than 13,000 RB&W high tensile bolts were used to connect 1200 tons of structural steel. (Where high clamping force wasn't required, RB&W standard machine bolts were used.)

With the same number of men, production in the field averaged about twice that of riveting under similar conditions. This faster erection saved about 25% in costs, too.

Once tightened to recommended minimum tension, RB&W high strength bolts *stay* tight. Stronger in shear and in tension under all types of loads, they are approved by the AISC for use in place of rivets anywhere . . . in buildings, bridges, equipment.

Dependable RB&W high strength bolts have uniform high quality and assemble easily. Send for this Bulletin HS-1 which gives all the information a man needs to work expertly with them. Ask for as many copies as you can use.

Russell, Burdsall & Ward Bolt and Nut Company, Port Chester, N.Y.... *largest independent producer of high strength bolts for construction.*

RB&W

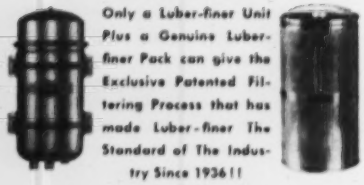
111th year

Plants at: Port Chester, N. Y.; Coraopolis, Pa.; Rock Falls, Ill.; Los Angeles, Calif. **Additional sales offices at:** Ardmore (Phila.), Pa.; Pittsburgh; Detroit; Chicago; Dallas; San Francisco. **Sales agents at:** Milwaukee; New Orleans; Denver. **Distributors** from coast to coast.

THERE'S NO SUBSTITUTE
for LUBER-FINER'S
ENGINEERED
PROTECTION

YES! IT'S WHAT'S
INSIDE
THAT COUNTS
The Efficiency of Luber-finer's Exclusive Patented Process
HAS NEVER
BEEN EQUALLED!

USE ONLY GENUINE
Luber-finer
DIESELPAKS



Only a Luber-finer Unit Plus a Genuine Luber-finer Pack can give the Exclusive Patented Filtering Process that has made Luber-finer The Standard of The Industry Since 1936!!

THERE'S A LUBER-FINER MODEL FOR EVERY TYPE OF ENGINE—EVERY TYPE OF OIL!!

LUBER-FINER PACKS AVAILABLE

1. REFINING PACK
Introduced to the public in 1935 for use with straight mineral oils, fuel oils, hydraulic oils, and inhibited industrial oils.

2. DIESELPAK
First made available in 1941, the DIESELPAK was primarily designed for use with H.D. detergent compounded oils and has also achieved outstanding results when used with fuel oils and straight mineral oils.

DON'T BE MISLED BY PRICE ALONE!

There is no substitute for DIESELPAK'S Patented Filtering Process for H.D. Compounded oils AT ANY PRICE!
The DIESELPAK cleans more oil faster—keeps it CLEAN longer—and gives more service and better engineered protection than ANY of the substitute filtering elements being offered for Luber-finer units.

IT PAYS TO GET THE BEST!

STANDARD OF THE INDUSTRY SINCE 1936

Luber-finer Units are Standard and Optional Equipment on America's Leading Diesel Trucks, Tractors, Stationary Engines.
Write for Complete Information to Dept. 71

LUBER-FINER, INC.
2514 S. Grand Ave., Los Angeles 7

City. Associated with him in the design of the new hotel will be the same group that designed the $16-million Dallas project, opened earlier this year. Other hotels designed by Tabler include the Robert Meyer, Jacksonville, Fla.; Statler, Hartford, Conn.; El Salvador, San Salvador; and Tikal, Guatemala City.

Ford Appointed Director for WSIUD of BDSA of USDC

Richard V. Ford has been appointed director of the Water and Sewerage Industry and Utilities Division of the Business and Defense Services Administration of the U. S. Department of Commerce. His appointment was announced recently by BDSA Administrator Charles F. Honeywell.

Ford is vice president and export manager for the Ford Meter Box Co., Wabash, Ind.

A graduate of Purdue University, Ford received his BS degree in chemical engineering in 1922. He served as a field artillery officer in World War I, and with the Navy in World War II—he holds the rank of commander, USNR.

After working in the sales division of the Worthington Corporation, he joined Ford Meter Box in 1928. He is vice president-elect of the Water and Sewerage Works Manufacturers Assn., and is a member of the American Water Works Assn.

J. M. English Joins Aluminum Structures Firm

J. M. English, associate professor of civil engineering, University of Calif. at Los Angeles, will take leave of his academic duties to organize a new division of Harvey Machine Co., Inc., at Torrance, Calif. Under the name Harvey Aluminum Structures, the firm will engineer, fabricate and erect aluminum structures. English has been a consultant to Boeing, Lockheed and the U. S. Navy, and a research staff member of California Institute of Technology and University of Southern California.

Edward Wenk, Jr., Takes New Post in San Antonio

Edward Wenk, Jr., structural engineer and former submarine research specialist for the U. S. Navy, has been named chairman of the Department of Engineering Mechanics, Southwest Research Institute, San Antonio, Tex. Holder of a civil engineering degree and a doctorate in applied mechanics from Johns Hopkins University and a master's degree in architecture from Harvard University, Wenk formerly headed the structures division of the David Taylor Model Basin, Washington, D. C. He conducted research for the Navy on ship strength. His responsibilities included model analysis of the strength of new designs and the development of structural design criteria.

Men and Jobs Briefs

• **Associations**—The Kentucky-Tennessee Industrial Wastes and Sewage Works Association names **Louis F. Birkel, Jr.** as chairman. . . . The Asphalt Institute appoints **Fred N. Finn**, district engineer at Sacramento, Calif., as research engineer on the forthcoming AASHO Test Road project in Illinois.

• **Corps of Engineers**—**Col. Stephen R. Hanmer** is appointed Assistant Chief of Engineers for Personnel in Washington, D. C. . . . **Col. Sears Y. Coker** is assigned to the Eastern Ocean District, as assistant district engineer with headquarters in New York City.

• **Careers**—Pennsylvania highway department announces the resignation of **Arthur L. Weisenberg** of Allentown as chief engineer and the appointment of **R. A. Farley** as acting chief engineer. . . . **Thomas Z. Osborne** is named director of the public service department for the city of Greensboro, N. C. . . . **R. J. Wilson** of Concord, N. C., is promoted to senior locating engineer with the North Carolina Highway Department. The General State Authority of Pennsylvania appoints **K. R. Burke** as acting director of the agency. . . . **Douglas B. Fugate**, director of toll facilities for the Virginia Department of Highways is promoted to assistant chief engineer of the department. . . . **William J. Crouse** rejoins Kentucky Department of Highways as a special assignment engineer.

• **Business**—Former supervisor of the Engineering Bureau for the city of White Plains, N. Y., **James Petrica** joins the Benjamin E. Beavin Co., Baltimore firm of consulting engineers. . . . **Robert O. Brown** is promoted to manager of engineering and construction for the marketing department of American Oil Company. . . . The firm of Ramsever & Miller, Inc., iron and steel consultants in New York City, appoints **Daniel A. Sutch** to be president of the firm. . . . **Clarence W. Meakin**, architect, joins as a partner the firm of Thayer and Lewis, consulting engineers in Norfolk, Va. The new name of the firm will be Thayer-Lewis-Meakin and Associates. . . . **J. Stanley Young**, former F. H. A.

chief of the Property Requirements Section, establishes his own private practice as a housing consultant in Washington, D. C. . . . Williams, Coile & Blanchard, a firm of architects and engineers in Washington, D. C., announces the election of **Luther E. Warner, Walter S. Grant, Jr., Eugene A. Groshong** and **J. Simpson Jarvis** as associate members of the firm to form Williams, Coile & Blanchard and Associates.

• **Education**—The University of Wisconsin College of Engineering at Madison, Wis., appoints **Herbert A. Smallwood**, chief engineer with the Petrol-Structors Co., of Calgary, Alberta, Canada, who will teach hydraulics and fluid mechanics in civil engineering.

• **Retirements**—**Hugh A. Tate**, who since 1926 has mapped underground rock and soil structure for highway surveys throughout North Carolina for the highway department, after 30 years of service. . . . **W. T. Smith** of Silver City, N. C., after 35 years of service with the North Carolina highway department.

Robert E. Parks, superintendent of warehouses, with the Salt River Power District, Phoenix, Ariz., after 36 years of service . . . **Charles R. Whiteman**, engineer in charge of maintenance of streets, alleys, sewers, bridges and viaducts for the City of Columbus, Ohio, after 52 years of employment with the city.

Obituaries

Theodore Warren Hacker, 65, a partner in the Baltimore engineering firm of Whitman, Requhart & Associates, died Sept. 22 at Gibson Island, Md. Although born in New York City, he spent most of his life in Baltimore. He had been with Whitman, Requardt & Associates and its predecessor firms almost continuously since 1917.

He joined the organization—then known as Norton, Bird & Whitman—immediately on taking his civil engineering degree from Cornell University in 1917. After serving as an ensign in the U. S. Naval Reserve in 1918-19, he returned to the company. In 1931, he went to Siam (Thailand) under the auspices of the Rockefeller Foundation and remained until 1934 as adviser on water supply to the Siamese government. On returning to the U. S., he took charge of all construction activities for his firm—then called Whitman, Requardt & Smith—and continued in this capacity until he became ill last spring.

(*Obituaries continued on page 92*)

. . . insure the *COMPLETE* containment of water, wastes, sludges and sewerage in . . .

- **IRRIGATION PROJECTS**
- **INDUSTRIAL RESERVOIRS & WASTE CONTROL PONDS**
- **MUNICIPAL WATER AND SEWERAGE PROJECTS**
- **MILITARY INSTALLATIONS**

"Hydromat" hydraulic mats, developed and manufactured by the leading manufacturer of asphaltic products for over 30 years, were developed in a scientific manner to provide a lining material that would allow the COMPLETE containment of water, wastes, sludges, sewerage, etc. "Hydromat" is installed as a monolithic liner, with mechanically sealed joints, that will expand and contract with soil movements without rupturing or breaking the seal. "Hydromat", a fully exposed type of lining, may be installed quickly and easily by untrained labor . . . make-ready requires only a minimum of time and effort. "Hydromat" provides the practical answer to the problem of efficiently relining old, cracked concrete or gunite linings. "Hydromat" hydraulic mats are produced in sheet sizes 4' wide up to 12' long . . . available in thicknesses of 5/32", 1/4" and 1/2".

WRITE TODAY!

WRITE TODAY . . . for your copy of our "Hydromat" TECH-TIPS covering complete technical data on the uses and installation of "Hydromat" Asphalt Liners.

W. R. MEADOWS, INC.

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FOR REMOTE CONTROL JOBS on a great variety of CONSTRUCTION EQUIPMENT

TRU-LAY *Flexible* PUSH-PULLS

• Adaptability to all sorts of mechanical situations explains, in large measure, the wide-spread use of TRU-LAY PUSH-PULLS on tractors and their accessories, power shovels, winches, road graders, road oilers, dump trucks, snow plows, engine-driven pumps, rock crushers, etc.

On construction equipment these dependable Push-Pulls are used for the remote control of hydraulic and air valves, brakes, clutches, transmissions, throttles, chokes, governors, power take-offs, and on many other applications.

TRU-LAY PUSH-PULLS are precision products, not gadgets. They provide positive remote-action whether anchorages are fixed or movable . . . for light loads or loads up to 1,000 lbs. . . . and they are effective over short or long distances up to 150 feet or more.

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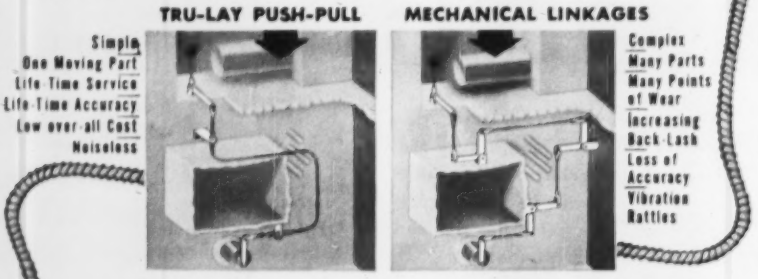
"**Solid as a rod but *flexible* as a wire rope**" is a good description of TRU-LAY PUSH-PULL REMOTE CONTROLS. This flexibility makes it possible to snake around obstructions . . . permits the ideal arrangement of all control elements . . . greatly simplifies installation of controls by reducing the number of working parts . . . damps out noise and vibration. Versatile, accurate, adaptable, rugged . . . they are the ideal remote controls for construction equipment.

Advantages of Tru-Lay Push-Pull flexibility and simplicity are pictured below—



TRU-LAY *flexible* PUSH-PULLS are dependable and accurate even under the most adverse conditions. They perform effectively under extremes of heat or cold . . . from jet engine temperatures to 70° below zero F. The inner, working member (lubricated for life during assembly) is fully protected by the tough, flexible conduit. Abrasive dusts, dirt and moisture are sealed out. Fittings are cold-swaged to make them integral parts of the control unit. It is a matter of record that we have never heard of a TRU-LAY *flexible* PUSH-PULL wearing out in normal service. Use of these versatile, simple and rugged controls means the virtual elimination of maintenance.

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Obituaries

Gustave E. Carlstrand, 74, former vice president of Baltimore Contractors, Inc., died Sept. 23 at Towson, Md. Mr. Carlstrand moved from his native Sweden to Batavia, Ill., as a child, later studied law and engineering in Chicago. After working for several Midwest construction firms, he moved to Baltimore as vice president of the M. A. Long Co. He was responsible for design and construction of grain elevators—his specialty—for the Baltimore and Ohio Railroad in Washington, D. C., and the Pennsylvania Railroad in Baltimore.

Townsend M. Carpenter, 70, civil engineer and builder of schools in the Buffalo, N. Y., area for more than 40 years, died Sept. 13. After graduating from the old Webb Institute in 1905, Mr. Carpenter began his career in the New York area. He moved to Buffalo as structural design engineer for Esenwein & Johnson, hotel builders, in 1915 and later formed the firm of Crooker & Carpenter, Inc., building contractors.

Brig. Gen. Richard K. Hale, 76, died Sept. 17 at his summer home on Cape Cod. A Brookline resident, he had been an associate commissioner of public works in Massachusetts. Joining the State Public Works Department immediately after World War I, he served for a period beginning in 1938 as director of its division of waterways.

Karl W. Wienand, 46, Bureau of Reclamation budget officer, died of a heart attack while at work at the Denver Federal Center, Sept. 24. He was a civil engineering graduate of Oklahoma A&M College and served as a lieutenant colonel with the Corps of Engineers during World War II.

Pierre M. Hulsart, Sr., 71, died Sept. 19, at Syracuse, N. Y. A 1906 graduate of New York University, he had served with the New York City Board of Water Supply for 48 years, retiring as division engineer in 1954.

Charles K. Johnson, 92, former construction engineer, died Sept. 29 at Westbury, N. Y. Swedish by birth, Mr. Johnson came to the U. S. in 1887. He was engaged in private home construction on Long Island.

Samuel Lichtenberg, 59, consulting structural engineer, died Sept. 30, at Mount Vernon, N. Y. A native of New York, he was graduated from Carnegie Institute of Technology. He was a veteran of World War I.

Research

Concrete Overlays

Repair damaged runways with prestressed overlays

Results of a two-year study by Southwest Research Institute at San Antonio (Texas) International Airport, indicate that prestressed concrete overlays may solve the problem of repairing runways that have been damaged by today's heavier aircraft.

San Antonio Airport taxiways and runways are breaking up, and conventional runways strong enough to withstand present loads would have to be twice as thick as the existing ones. Only two courses of action were open to airport officials—tear up old pavements and replace them with new concrete of increased strength, or place overlays on existing pavements to increase the load capacity to the required amount. It was finally decided to test the overlay principle.

Southwest Research Institute scientists tested both the conventional thick overlays and four-inch prestressed concrete slab overlays, and have come out in favor of the prestressed sections. According to M. M. Lemcoe, manager of structural research for the institute, "Although the prestressed overlays cost somewhat more at first, we believe that the greatly increased service life of the pavement and the lowered maintenance cost will more than offset the higher installation expense."

Research Funds Are Willed To Engineering Foundation

The Engineering Foundation will be able to enter into more research projects as the result of money received from a bequest.

Income from some $425,000, from the estate of the late Edwin H. McHenry, civil engineer and railroad executive of Ardmore, Pa., is being made available to the foundation through United Engineering Trustees, Inc., the organization which is custodian of the foundation's funds.

McHenry, who died in 1931, was chief engineer for the Northern Pacific and Canadian Pacific railways at various stages of his career, and vice president of the New York, New Haven, & Hartford Railroad.

Electrification of the New Haven road, carried out under his direction, was the first large-scale undertaking of its kind in the U.S.

(*Research continued on page 94*)

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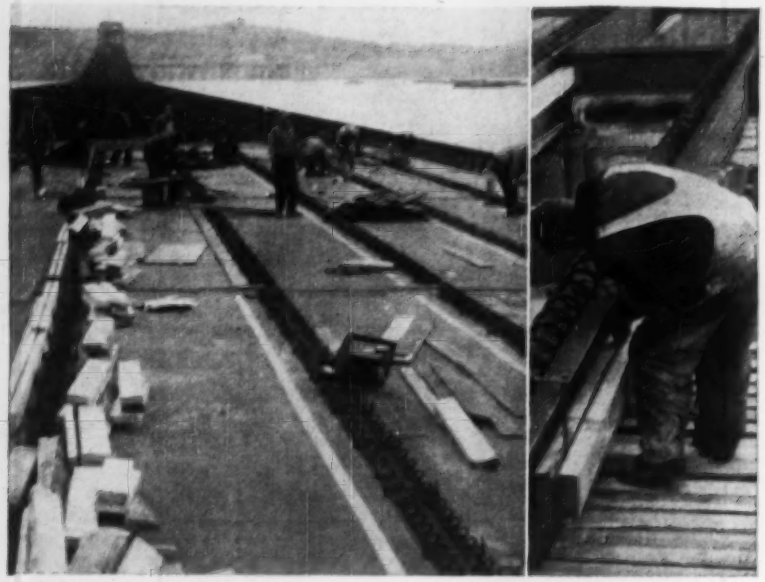


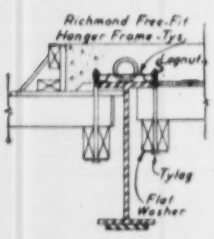
Left: Erecting bridge deck forms. Right: Using Richmond Free-Fit Hanger Frame-Tys, workmen fasten walers from above. Contractors: Garofano — West-Shore — Euclid. Engineers: Madigan-Hyland.

"Fast forming method & Richmond Hanger Frame-Tys speeded up Tappan Zee deck paving"

Charles Spero

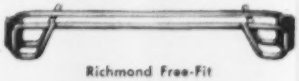
The 6-lane deck of the New York State Thruway Authority's 3-mile long Tappan Zee Bridge took 33,000 yards of concrete and considerable ingenuity. A combination of stock-size plywood sheets, filler strips of wood and metal, and Richmond Free-Fit Hanger Frame-Tys helped get the bridge open early.

Euclid's construction boss, Charles Spero, says they saved lots of time and money by hanging the forms with Richmond Free-Fit Hanger Frame-Tys —45,430 of them. Since the Richmond Tylag passes through an over-size coil and is adjusted by a nut on the upper end, the forms can be handled from above. "These Richmond Hangers speed up the whole operation," Mr. Spero points out. "You don't have to build a lot of scaffolding, work under the deck and risk accidents. The forms are quickly assembled, and easy to take out, too. And there's hardly any repair work to be done.



Section of Form Construction

"What's more, they're more economical when you figure the cost per foot," says this veteran Euclid superintendent. "A lot of fellows who use wires forget to figure the hidden costs —they don't stop to think about the labor putting in the wires and, later, the patching. With wages going up all the time, those savings keep getting bigger."



Richmond Free-Fit Hanger Frame-Ty

Richmond also makes a standard type Hanger Frame-Ty with two helix coils. For use where a slab is haunched to meet the top flange of the steel beam, Richmond makes Offset Hanger Frame-Tys with coils high enough above the top of the beam to permit the metal to be properly set back from the concrete. Richmond Fascia Hanger Frame-Tys combine hanger and fascia-tys for use on outside girders of bridge decks.

All these—along with the complete line of Richmond engineered tying devices, anchorages and accessories—are described in the new Richmond Handbook. To get your copy—or help on a specific concreting problem — write to Richmond Screw Anchor Company, Inc., 816 Liberty Ave., Brooklyn 8, N. Y. or 315 So. Fourth Street, St. Joseph, Mo.

Underwater TV Camera Has Clear-Water Lens

An improved underwater television camera containing a lens of clear water has been developed by the National Research Council of Canada to obtain better images when operating in murky water.

Thus far the camera has been used to carry out inspections of several underwater portions of the Welland Ship Canal which connects Lake Erie with Lake Ontario.

This new television camera operates in the normal manner: a diver receives instructions as he descends and positions the camera. Focusing and other camera adjustments are made from a control unit above. The picture is relayed on a closed circuit to a television screen on the surface.

The new lens is actually a cone of metal with plastic ends which is filled with clear water. The camera has been designed to operate in depths up to 200 ft. It is lowered by means of a mobile crane and the diver descends alongside the equipment.

The camera can also be mounted on a sled that has been designed for relatively permanent viewing of an underwater location.

New Service Offers 9-Month Weather Forecast

Another long-range weather forecasting service is now available to the construction industry.

Lyle E. Broche, who for six years has concerned himself with degree-days for the major oil companies, has launched recently into precipitation forecasts as well. He extends his prognostications nine months into the future, which is about three months further than most long-range weather forecasters have been willing to go (ENR July 16, 1953, p. 35).

The Brosche service works this way: On July 15 a forecast is issued covering the periods October-December and January-March. This forecast consists of a prediction of average temperature, precipitation and total days with freezing temperature for each three-month period.

Then on January 15 a forecast is issued giving quarterly average temperature, precipitation and total days in each quarter with temperature to reach 90 deg for the periods April-June and July-September.

Meteorologist Brosche, formerly with Pan American World Airways, now operates as The Brosche Method out of Dearborn, Mich.

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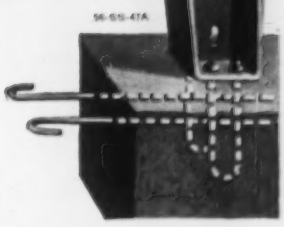
Under this smart appearance is a rugged steel structure. At the peak and knee, the continuously welded Rigid Frame I-section steel plate beams are securely bolted together. The frame is designed to put the assembly bolts primarily in *shear* rather than *tension*. At the foundation, each column is permanently bolted. Stran-Steel Rigid Frame buildings are clear-span structures available in widths of 40, 50, 60, 70, and 80 feet, and multiples thereof.

Unlimited design possibilities make these buildings ideal for warehouses, factories, retail or service centers. Fast, accurate assembly is made possible by precision punching and die forming. You get the cost-saving features of a pre-engineered structure in a quality building which is durable, fire-safe, easy to insulate and easy to heat.

For complete engineering details, call your local Stran-Steel dealer or send for the new Industrial Buildings Catalog.



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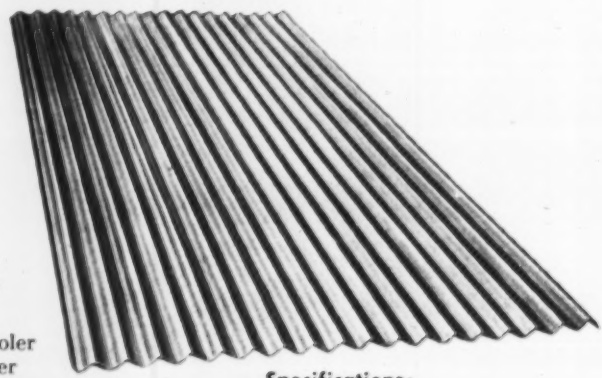
Harold Dickson, Factory Manager, says the main reasons for using aluminum were maintenance-free economy and ease of installation. He adds: **"Our own crew applied the material as engineered by your supplier, Bethlehem Aluminum, Inc. We feel that our new roof is completely in character with our own Mack trucks—attractive, indestructible and strong as a bulldog."**

Add the advantage of radiant heat reflection—for cooler interiors in summer, warmer in winter. And remember this material is ideal for siding as well as roofing.



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REYNOLDS ALUMINUM

BUILDING PRODUCTS

Legal

Acceptance of Payment May Bar a Later Claim

Where a balance claimed due by a creditor is fairly in dispute, the controversy as to the amount due renders the claim unliquidated, and where the claim is unliquidated, acceptance and use of a check that has been tendered in full payment of the claim constitutes an accord and satisfaction of the entire obligation.[1]

In the above case, an action was brought to recover a balance said to be due for steel sold to the buyer and delivered to a third party at the request of the buyer. The steel was delivered by the New York Central Railroad which notified both seller and buyer of the weight of the steel according to its scales. The third party to whom the steel was delivered had the same weighed by an official weight scale and this indicated that the steel did not weigh as much as claimed by the railroad and demanded a credit to cover the deficiency.

After the third party notified the original buyer of the discrepancy in the weight of the steel, negotiations were conducted by the parties in an effort to settle the dispute but no agreement was reached. Thereafter the buyer sent the seller a check for the amount originally billed less the amount the ultimate purchaser demanded as a credit. This check contained the following notation: "In full settlement of account to date." The seller made no protest at the time this check was received but deposited it in its bank and retained the proceeds. About a year after the receipt of the check in full settlement of the account to date, the seller brought an action to recover a balance which it claimed was due it and obtained a judgment. This judgment was reversed on appeal and the complaint dismissed, the appellate court holding that the acceptance of the check constituted an accord and satisfaction of the claim.

The appellate court stated: "There is substantially no dispute between the parties as to the legal principles governing accord and satisfaction. Where a balance claimed due by a creditor is fairly in dispute, the controversy renders the claim unliquidated. Nassoiy v. Tomlinson, 148 N.Y. 326, 42 N.E. 715; Bingham v. Browning, 197 Ill. 122, 64 N.E. 317; Dewar v. Loy, 248 Ill. App. 396; In re Silver, D.C., 109 F. Supp. 200. Where a claim is unliquidated or disputed, the acceptance and use of a remittance tender 'in full' of the claim amounts to an accord and satisfaction of the entire obligation; see the Nassoiy and Bingham cases cited above; and also In re Estate of Cunningham, 311 Ill. 311, 142 N.E. 740; Economy Fuse Co. v. Standard Electric Mfg. Co., 359 Ill. 504, 194 N.E. 922; Krummne v. Wilbur E. Howett Co., 311 Ill. App. 243, 35 N.E. 2d 395; Quinlan & Tyson, Inc., v. National Casualty Co., 311 Ill. App. 369, 36 N.E. 2d 470."

(1) Standard International Corp. v. Alert Steel Co., 134 N.E. 2d 613, Appellate Court of Illinois, May 7, 1956.

Substantial Performance Covers Minor Omissions

The doctrine of substantial performance usually allows a contractor to recover the contract price despite the existence of minor defects or omissions in his work.

In an Illinois case, for example, a plumbing and heating subcontractor brought an action against the prime contractor to recover a sum it claimed was due under the contract. The prime contractor counter-claimed for damages. He said some of the work that had been performed under the subcontract in question and under another subcontract was defective. The subcontractor was granted a judgment which was affirmed on appeal.[1]

The court found that the evidence sustained a finding that the subcontractor had in good faith performed his contract, and that if there were any omissions they were so slight and unimportant as not to justify any deduction from the original contract price.

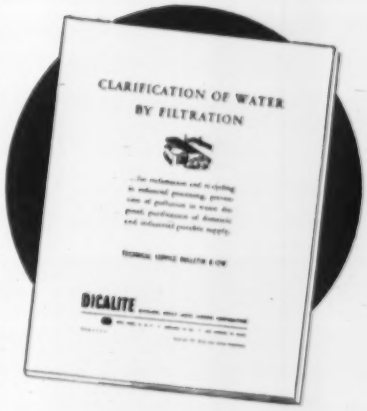
As to the prime contractor's claim that there were defects in another job that the subcontractor had performed, the court found that the evidence indicated that this question in dispute had been settled by a building trades council. Since that settlement had been executed by both parties, it constituted an accord and satisfaction and barred the right to raise the claim again.

(1) Merryman Plumbing and Heating Service, Inc. v. Goodman, 134 N.E. 2d 121, Appellate Court of Illinois, May 3, 1956.

Anticipatory Breach Excuses Performance

If you buy some materials and, before deliveries have been completed, tell the seller you won't accept any more, the law calls that an anticipatory breach of contract. The seller is relieved from further obligation under the contract and has a right to bring action against you.

In a New York case, for example, a purchaser of materials sued the seller



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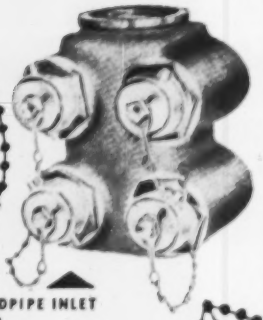

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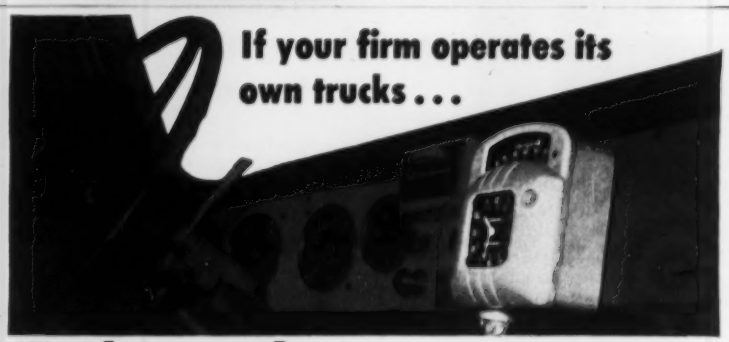

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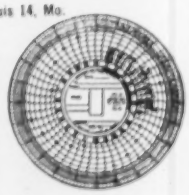

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for damages resulting from the failure on the part of the seller to make proper deliveries of the materials. The seller counter-claimed damages, claiming that the buyer had notified the seller that it would not accept delivery of any more of the materials ordered under the contract. The buyer obtained a judgment at the trial but the judgment was reversed by the appellate court, the appellate court holding that the evidence produced at the trial was not sufficient to justify a verdict that the seller had breached the contract and directed a new trial.[1]

The appellate court indicated that if the materials in question were available from other persons, the damages that the buyer could recover, even if the seller had breached the contract, was limited to the difference between the market value of the materials and the contract price. The buyer claimed as damages the loss of profits he said he sustained by reason of the failure on the part of the seller to deliver the materials in question.

As to the claim by the seller in its counterclaim that the buyer had indicated that it would not accept further deliveries of the materials and that such conduct constituted a breach of contract, the appellate court, quoting from Williston, Law of Contracts, 1937, Vol. 5, Section 1301, page 3699, stated: "A promisor can no more be expected to perform his promise when it is clear that he is not going to receive counter-performance, than when he actually has not received it."

The appellate court went on to say that "The rule excusing further performance when there has been an anticipatory breach and authorizing recovery against the party so indicating an intention to breach is a rule sustained by the great weight of authority." The court cited 17 C.J.S., Contracts, Section 472-a and many cases in the New York Court of Appeals.

[1] Mignon v. Tuller Fabrics Corp., 148 N. Y. S. 2d 695, N. Y. Supreme Court, Appellate Division, First Department, February 16, 1956.

Refusal to Grant a Release Upheld When Claim Disputed

Even though a contract may require that the subcontractor give a general release before he can collect final payment, he need not and should not do so when the amount of the final payment is in dispute.

When the question arose in a New York case, the court noted that any other conclusion would put the sub at the mercy of the prime contractor insofar as his ability to collect what might legally be due him.

In that case, D.M.W. Contracting Co., Inc., as prime contractor, agreed with the New York Housing Authority to erect a group of buildings at Throggs Neck, Bronx. It then entered into a contract with J. I. Hass Co., whereby the Hass was to do the painting required for the job for the sum of $244,000. After the paint job was completed, the general contractor insisted that the subcontractor keep the windows open on damp and foggy nights. This resulted in condensation of water and discoloration of the original paint and the subcontractor was directed to repaint part of the work but was refused compensation for such additional work.

The prime contractor offered to pay the subcontractor the amount due under the contract, if he would execute a general release, which he refused to do. The subcontractor then brought an action against the prime contractor and its sureties to recover the amount due under the contract and for the cost of doing the repainting job and obtained a recovery.

The prime contractor interposed the defense that the contract contained a provision to the effect that before the subcontractor would be entitled to final payment, it would have to execute a general release and that, having failed to do so, it was not entitled to a recovery. On this point, the court stated: "I think the contention untenable. No supporting authority has been cited, and I am unable to think of any rule of law or any consideration of reason, logic or justice with which it accords.

"If defendant had offered to pay plaintiff (subcontractor) all that was in fact owed and plaintiff had refused to accept that sum, it may be that plaintiff would be unable to recover interest on that sum after the time it was offered. But that is not the situation here. The amount defendant (prime contractor) offered to pay is less than the amount plaintiff in good faith claimed was owing, less than the amount I find was due, and even a trifle less than defendant now belatedly concedes was due.

"If plaintiff had accepted the sum offered, it would have been precluded from thereafter claiming more, whether it signed a release or not. Allen v. City of Oneida, 210 N.Y. 496, 104 N.E. 920; Couldwell Wingate Co. v. City of New York, 269 N.Y. 539, 199 N.E. 524; MacArthur Bros. Co. v. City of New York, 177 App. Div. 725, 164 N.Y.S. 753, affirmed 224 N.Y. 629, 121 N.E. 877, and defendant's contention thus amounts to a contention that it was at liberty to make its own determination of what was due and require plaintiff to accept that sum and thereby forego its claim for further sum or its

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Fact #4 **EFFICIENCY** – Smooth, high-gloss tar-enamel inside surface gives maximum rate of flow, minimum friction loss.

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Fact #6 **MANY JOINING METHODS** – ALCO electric welded steel pipe joints may be welded, flanged or Dresser-coupled. Can be joined to be leakproof under pressure conditions ranging from vacuum to thousands of pounds per square inch of water, air, gas or steam.

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rights to interest upon the sum actually found to be due. The contract certainly never was intended to have that effect and it cannot and should not be construed as having that effect. D. M. W. Contracting Co. v. Board of Education, 285 N.Y. 591, 33 N.E. 2d 254, bears no resemblance to this case."

The court, in granting judgment to the subcontractor, found as a fact, that the painting job as originally done was proper and that the defects that had to be corrected resulted from action by prime contractor whose insistence that the windows be kept open when the work was over for the day set up adverse conditions.

(1) J. I. Haas Co. v. D. M. W. Contracting Co., 143 N.Y.S. 2d 917, N. Y. Supreme Court, May 31, 1956.

Non-Performance by One Is a Release to Other

If you enter into a contract and the other party clearly shows an intention to back out before your time for performance arrives, you are generally considered released from your obligation to perform.

Here's how it worked out in a Massachusetts case:

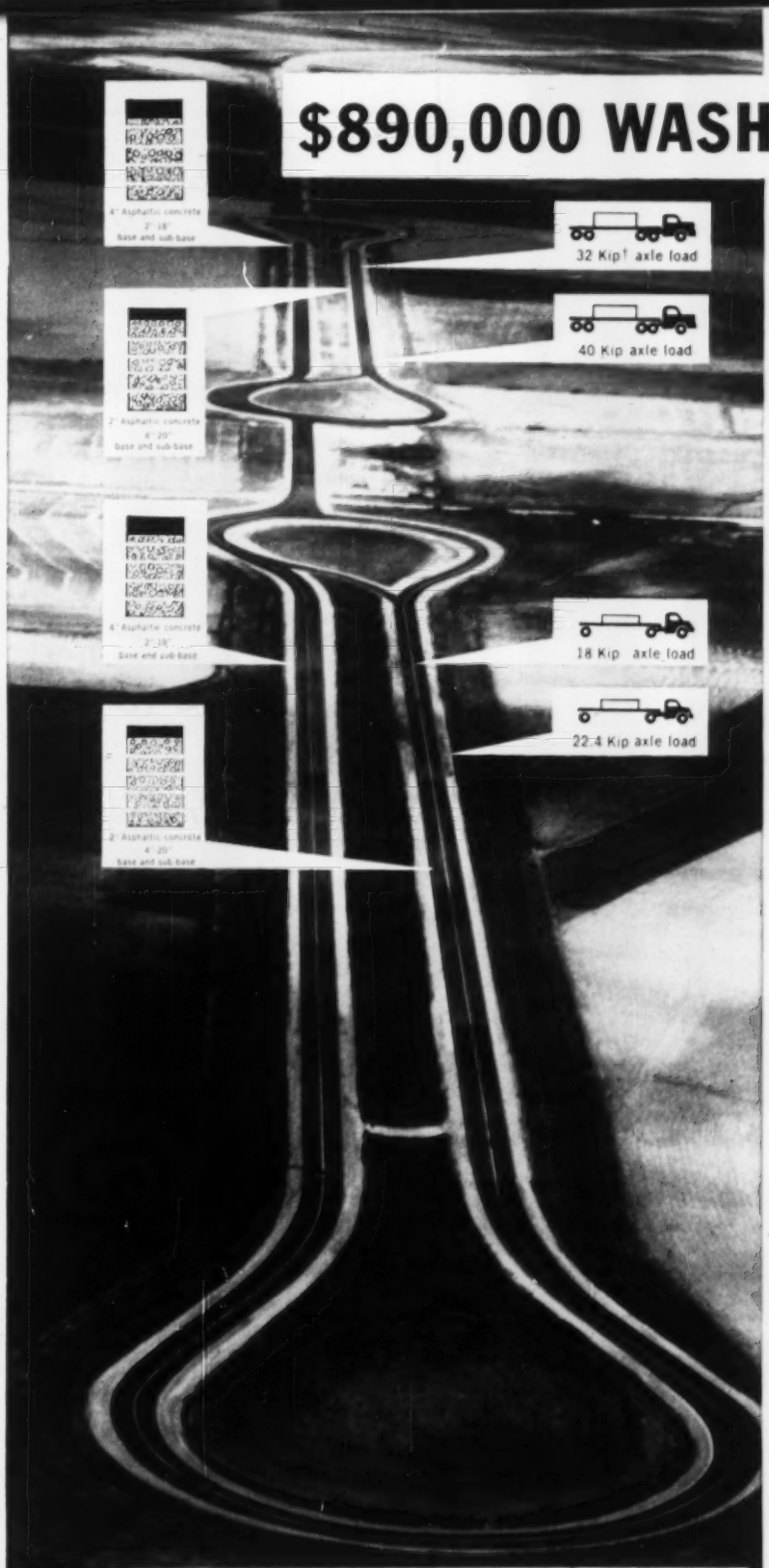
A contract was entered into for the purchase of a plot of land. The contract provided that the seller would tar the surface of the roadway to the town and, if he couldn't perform the contract because of defects in the title, that the contract would be terminated and the seller would return the deposit payment to the buyer. The contract also provided that if the buyer failed to tender the balance of the contract price and accept title to the land upon a date stipulated in the contract, the seller could retain the deposit payment as liquidated damages.

At the time stipulated in the contract for delivery of title and payment of the balance of the contract price, the seller did not tender a deed to the property nor did the buyer tender the balance of the contract price, nor was the time for performance extended. The seller had not tarred the surface of the roadway nor did the buyer make any demand upon him to do so, or express any intent to avoid the agreement because the road had not been tarred. It appeared that both the parties acted as if they were going to let the matter in question drop.

About six months later, the buyer had an examination made of the title to the land and was informed that it was not marketable. He then made a demand for a return of the deposit payment and, upon the seller's refusal to

(*Continued on page 102*)

$890,000 WASHO Test confirms..



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Q What does "WASHO" mean?

A Western Association of State Highway Officials.

Q How was the test made?

A Loaded trailer-trucks were operated over 2 test loops. Each straight-away contained five 300-foot test sections. Over-all thicknesses were 6, 10, 14, 18, 22 inches. Pavement thicknesses were 2 and 4 inches. Foundation soil: A-4-8 silt of moderate plasticity.*

Q What was the least structure to carry the 18-kip† load without distress?

A 2-inch Asphaltic concrete pavement over 14-inch sub-base.

Q What was the least structure to carry the 40-kip load without distress?

A 4-inch Asphaltic concrete pavement over 14-inch sub-base.

Q What did test reveal about Asphaltic concrete-paved shoulders?

A They permit reduction of over-all thickness by several inches. They lower maintenance costs. Increase safety through greater width.

Q Can these findings be applied generally?

A Yes . . . with normal engineering modifications for climate, foundation soil, aggregate, etc.

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*Ref.: Highway Research Board Special Reports
18, "The WASHO Road Test – Part 1: Design, Construction and Testing Procedures"
22, "The WASHO Road Test – Part 2: Test Data, Analyses, and Findings"
†Kip – 1000 lbs.

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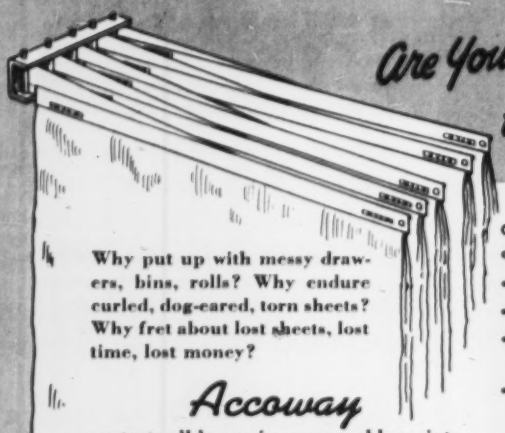

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do so, brought an action to recover it. The action was dismissed by the trial court on the ground that, since the buyer did not call to the attention of the seller the defects in the title and did not give the seller an opportunity to correct the defects in the title and did not tender the balance of the price called for by the contract, the agreement had been terminated and under the terms of the contract, the seller was entitled to retain the deposit as liquidated damages.

The judgment of the trial court was reversed on appeal, the appellate court holding[1] that the buyer was entitled to a return of the deposit payment made under the contract. This ruling was predicated on the fact that on the date when title was to be delivered, the seller had not tarred the roadway as he was required to do under the contract and that the performance of this part of the contract was a condition precedent to performance by the buyer and relieved the buyer from the necessity of offering performance.

The court held that the obligation of the buyer to pay the balance of the purchase price and the obligation of the seller to tar the roadway were mutually dependent covenants, and stated: "The general rule is that when performance under a contract is concurrent, one party cannot put the other in default unless he is ready, able, and willing to perform and has manifested this by some offer of performance. Leigh v. Rule, 331 Mass. 664, 668, 121 N.E. 2d 854, and authorities cited. But as we have said in that case 'the law does not require a party to tender performance if the other party has shown that he cannot or will not perform.' 331 Mass., at page 668, 121 N.E. 2d at page 857.

"Here at the time for performance the defendant (seller) had demonstrated his inability to perform by not having tarred the roadway as he agreed to. No contention is made that the plaintiff (buyer) waived this provision; and it did not lose the right to have it performed by not calling upon the defendant to do so prior to the date of performance. The plaintiff under these circumstances was not obliged to tender performance, Leonard v. Wheeler, 261 Mass. 130, 158 N.E. 502; Leigh v. Rule, 331 Mass. 664, 669, 121 N.E. 2d 854, and was entitled to rescind the contract and to the return of its deposit."

(1) Vander Realty Co. v. Gabriel, 134 N.E. 2d 901, Supreme Judicial Court of Mass., June 4, 1956.

(These summaries of court decisions are prepared by I. Vernon Werbin, New York attorney and civil engineer.)

What's the real story on rubber alloys in asphalt hot mixes?

The real story on alloying asphalt with rubber for use in hot mixes, as we see it, is this:

1. Asphalt is a good road building material. But just as metals are alloyed to meet certain of today's needs, so can asphalt be improved with rubber.

2. Experiments with rubber for roads stretch back over three decades. Through the years much data have been accumulated. With these data and certain laboratory tests, we can prove that asphalt is definitely improved by rubberizing.

3. Although no rubberized road has been down long enough to prove our case conclusively, we can cite a number of installations where some improvements have been fully verified and better over-all durability is strongly indicated.

4. Recent years have seen the development of improved rubberizers, foremost of which is RUBARITE. RUBARITE is a powder of synthetic rubber combined with particles of a special carrier. It was developed after years of experimentation and proved in hundreds of laboratory and road tests to be more effective than other types and forms of rubber in improving asphalt.

5. Today, there are some 1,100 miles of rubberized roads in use. These are the result of improvements such as RUBARITE and the fact that tests to date have been successful enough to convince a number of progressive engineers and contractors that, at the minimum, rubberizing will fully justify its added cost.

Well, that's the story. We feel it's strong enough, at least, to warrant further investigation of RUBARITE. If you agree, feel free to write for the booklet, "Bitumen Rubberizers," plus other details and samples. Address: Rubarite, Incorporated, 1702 Philtower Building, Tulsa, Oklahoma.

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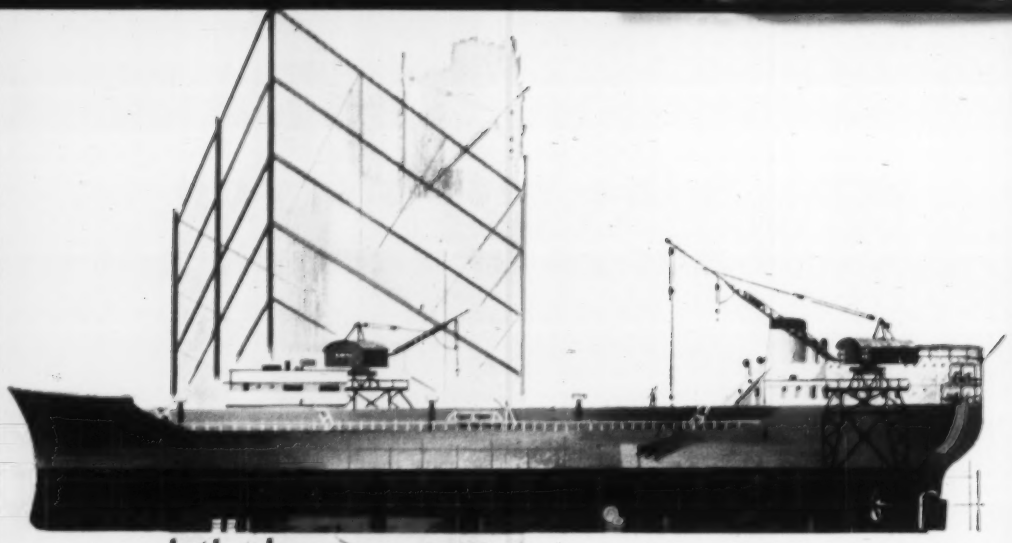

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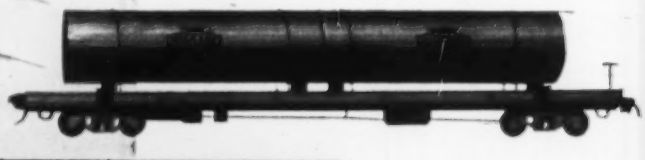

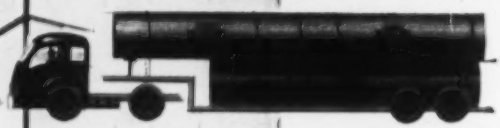

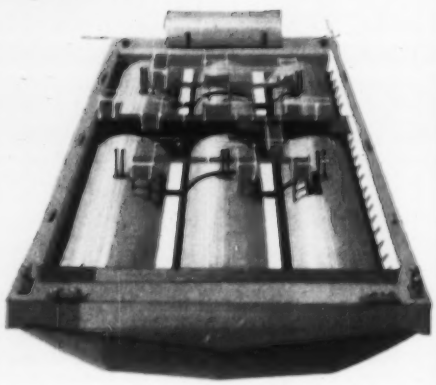

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Books

Building Design Handbook

ARCHITECTURAL GRAPHIC STANDARDS—Fifth Edition, by C. G. Ramsey and H. R. Sleeper. 758 pp. John Wiley & Sons, Inc., New York, N. Y.; Chapman & Hall, Ltd., London. $18.50.

In updating this famous reference book for building designers, the authors have considerably enhanced its value. About 75% of all the pages are new or revised.

As in the past, each page contains one or more building details, with suggested dimensions and numerous pertinent notes. In the new edition, arrangement of topics has been changed, however. The book has been organized into 23 sections, each with its own table of contents. In addition, the notes on the new plates have been made easier to read, by a change from hand lettering to varitype.

Additional material in the new edition includes design of plank and beam framing; curtain walls; pneumatic tubes; elevators and moving stairs; design of special fireplaces; comparative costs of roof coverings; furniture and equipment; and ceramic tile.

Foundation Engineering

DESIGN AND CONSTRUCTION OF ENGINEERING FOUNDATIONS—by F. D. C. Henry. 547 pp. McGraw-Hill Book Co., Inc., New York and London. $9.

Here is a book that should prove very useful to engineers engaged in the structural design of foundations and to students who wish to become proficient in this field.

Always emphasizing fundamental principles, the book covers geology, soil mechanics, mining subsidence, footings, piers, piles, retaining walls, bulkheads, culverts, cofferdams, caissons, underpinning and moving of structures. In addition, it reports the results of recent research and lessons learned from contemporary experiences, as reported in technical journals. And in an appendix, 100 design problems are presented.

The book reports both British and American practice in the design of reinforced concrete substructures.

Structural Theory Unified

ANALYSIS OF STRUCTURES—By N. J. Hoff. 493 pp. John Wiley & Sons, Inc., New York, N. Y.; Chapman & Hall, Ltd., London. $9.50.

The book presents analytical methods of determining stresses in structures at the level of a first-year graduate course for civil, mechanical and aeronautical engineers. But its principal objective was more than just to offer formulas for the solution of problems in stress analysis.

The author's first purpose was to develop a logical and unified theory. He shows that the various methods used by structural engineers are all logically interconnected. Starting with the laws of equilibrium for a point in a plane, he derives the principle of virtual displacements. He then uses that principle to develop the other useful principles commonly employed for structural analysis.

A second purpose was the development of the minimal principles of structural theory. He also covers buckling calculations, complementary energy and least-work methods. Numerous examples are worked out indicating the application of these principles.

A Canal and Its Builders

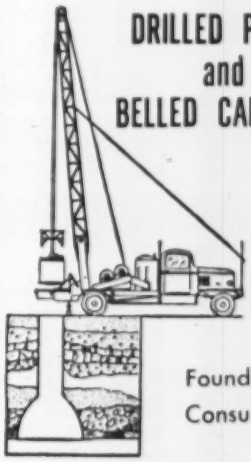
RIDEAU WATERWAY—By Robert Legget. 249 pp. University of Toronto Press, Toronto, Ontario. $5.

One of the little-known artificial waterways of this continent is the Rideau Canal in Canada, connecting Kingston at the outlet of Lake Ontario with Ottawa on the Ottawa River, a distance of 124 miles by waterway. Built during the period 1826-1832, this canal provided the final link in a navigable channel from Montreal to the Great Lakes by way of the Ottawa and Rideau Rivers long before the present St. Lawrence canal system was completed. The latter, which is now being replaced by a modern ship canal, was opened in 1851.

In its hey-day the Rideau Canal carried much freight, and for many years regular passenger service was maintained between Montreal and Kingston. But the commercial traffic dwindled as railways and highways took over. The canal still is in use, but only for pleasure craft.

Even less well known is the fact that construction of the Rideau Canal was undertaken as a defensive measure in case of a renewal of hostilities with the United States! It was to provide a route for taking military supplies to the Great Lakes in case the United States should seize control of the international section of the St. Lawrence River.

For engineers, chief interest in this book will be found in its detailed account of the construction of the canal, its dams and locks under the able direction of Lieut. Col. John By of the British Royal Engineers, using Cana-



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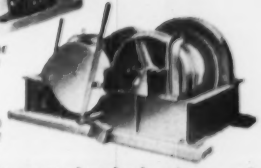

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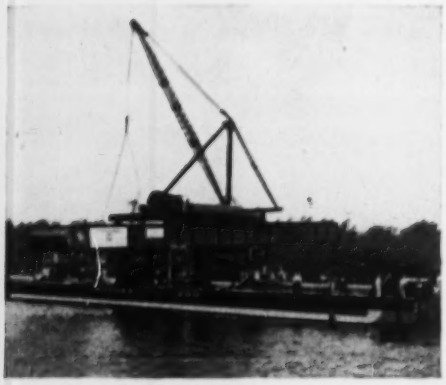

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dian contractors. The project was one of major magnitude for that day. How well it was carried out is clearly shown by the fine structures that still are in service after more than a century.

The author, himself a civil engineer, has compiled a very readable account of the problems faced by Colonel By and his associates and how they met them with the limited facilities available to them. This takes nearly half the book. The remainder is a review of the part the canal has played in the transportation history of Canada and, finally, a detailed account of the canal as seen today from a craft making a leisurely trip along the waterway from Kingston to Ottawa. This too is good reading, especially as scattered through it are bits of additional information about the original engineers and contractors that the author uncovered during the vast amount of research that must have gone into the preparation of the book.

Miscellaneous Notes . . .

• **Federal scientific activities** — The National Science Foundation has published a guide to the complex of scientific activities of the 38 federal departments and agencies.

The 349-page directory, "Organization of the Federal Government for Scientific Activities", can be purchased from the Government Printing Office for $1.75. The product of a two-year survey by the foundation, the report is the first in nine years—and by far the most exhaustive ever—to describe separately each of the federal government's hundreds of scientific units.

The units whose activities and functions are described are engaged in the conduct, planning or administration of research and development; expansion of research and development plant facilities; testing, evaluation and standardization; training of scientific manpower; dissemination of scientific information; and collection of general purpose statistics—such as business data—in the natural and social sciences.

Order from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

• **Silicon aluminum steels** were studied by a British research organization and compared with other steel alloys with respect to mechanical properties, weldability and resistance to oxidation. Oxidation was tested in ordinary and corrosive atmospheres and at varying temperatures. A 40-page report on the experiments can be obtained from Fulmer Research Institute, Stoke Poges, Bucks, U. K. Cost is 10 shillings 6 pence.

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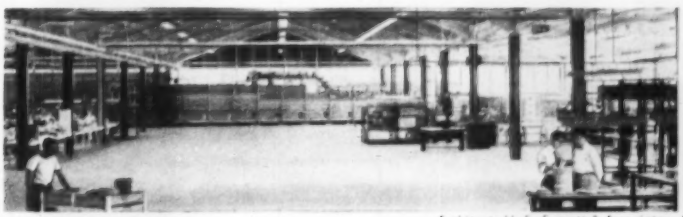

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As part of their $1.2 million sewage improvement project, Hopkinsville, Ky., will pay $733,840 for 156,000 lin ft of gravity sewers and 30,800 lin ft of force mains. Howard K. Bell, Lexington, Ky., is consultant for the Hopkinsville Sewerage Commission.

Cast iron pipe at $2.75 to $5 per lin ft took the contract, although this was 3% higher than the total for the asbestos cement alternate.

Gravity sewers will use vitrified clay pipe except for railroad, river and highway crossings, where cast iron pipe is used. Limited amounts of pipe offered an alternate for asbestos cement versus vitrified clay. Excavation bids on 156,000 lin ft of trench are shown for nine depths to a maximum of 20 ft. Rock excavation runs $8 to $15 per cu yd.

The $44,645 repaving job can be eliminated by the Sewerage Commission.

Contractor is Three A Builders of Evansville, Indiana. Their low bid beats the engineer's estimate by 14.97% and the second low bid by 14.75%.

Specifications under this contract call for ASTM standards C-150, Type I, latest revision, for concrete and for cast iron pipe with bell and spigot joints ASA standards A21.6 and with mechanical joint ASA, A21.11.

Minimum wages range from $1.70 to $3.175 per hour.

1C Three A Builders, Evansville, Ind	$733,840
2 Clark Constr. Co., Owensboro, Ky	860,710
3 Mary Constr. Co., Cape Girardeau, Mo	1,156,588
EE Howard K. Bell, Consulting Engineers, Lexington, Ky	882,981

Bids: 7-25-56 Items	Unit	Quantity	Unit Prices 1C	2
Division "A" Gravity Sewers				
CIP, RR X-ing, 10"	lf	108	$6.00	$8.20
bell & spigot, 16"	lf	112	10.00	11.51
10"	lf	264	6.00	6.89
8"	lf	650	5.00	5.29
6"	lf	110	4.00	3.67
mech jt, riv X-ing, 8"	lf	96	8.00	15.50
6"	lf	352	4.00	11.81
bell & socket, riv X-ing, 8"	lf	168	5.00	25.95
6"	lf	84	4.00	21.68
Pipe, cover, und RR, 24x1¼"	lf	62	16.00	36.06
16x1¼"	lf	95	16.00	28.05
und hy, 14x1¼"	lf	230	16.00	20.03
Fittings, CIP, ip	lb	4,750	0.30	0.37
Pipe & ells, hvy soil, 6", in X-ing	lf	350	4.00	4.01
VCP culv, 24" lower	ls	job	300.00	86.81
VCP, 15", std str	lf	2,090	3.00	3.76
15", extr str	lf	59	3.50	3.93
12", std str	lf	4,140	2.00	2.65
10", extr str	lf	164	2.00	2.46
10", std str	lf	9,530	1.80	2.34
8", std str	lf	104,210	1.15	1.60
6", extr str	lf	3,100	1.35	1.70
6", std str, incl bends & plugs	lf	30,550	0.85	1.40
Y-branch, 15x6"	ea	11	6.00	11.55
12x6"	ea	63	5.00	7.25
10x6"	ea	178	4.00	5.64
8x6"	ea	1,470	3.00	3.75
6x6"	ea	257	2.00	2.73
Extr for pre-mould bit jts, 15"	lf	3	1.00	4.18
for VCP, 12"	lf	740	0.30	3.14
10"	lf	1,210	0.40	2.55
8"	lf	6,560	0.20	1.79
Extr for rubber jt, 15"	lf	280*	0.50	3.96
for VCP, 12"	lf	100*	0.65	3.41
10"	lf	1,080*	1.00	3.30
8"	lf	1,340*	1.00	2.84
Trench & bkfl, 0-4'	lf	68,350	0.90	0.47
4-6'	lf	63,630	0.90	0.63
6-8'	lf	14,360	1.10	0.89
8-10'	lf	5,120	2.00	1.20
10-12'	lf	2,310	2.75	1.54
12-14'	lf	1,240	3.25	1.91
14-16'	lf	326	5.00	2.34
16-18'	lf	307	6.25	2.94
18-20'	lf	307	8.50	3.74
Excav, search trench, no pipe	cy	100	2.00	1.03
Tunnel, 3-8' long	lf	150	5.00	5.34
8' and longer	lf	120	10.00	32.05
Extr for bore under RR, 24"	lf	65	15.00	29.38
for stl bore, 16"	lf	95	15.00	26.71
for bore under hy, 14"	lf	230	12.00	21.37
Bore for CI sewer, 8"	lf	20	10.00	13.36
6"	lf	44	8.00	10.68
Excav, solid rock	cy	4,720	10.00	13.36
Solid rock in tunnel	cy	15	50.00	32.05
Sheath & shore left in place	Mbfm	2	100.00	106.90
Crushed rock, pipe bed	t	750	2.25	2.61
on surf	t	8,530	2.50	2.47
MH, std, compl, 0-4'	ea	191	140.00	166.95
4-6'	ea	235	160.00	192.33
6-8'	ea	89	200.00	227.05
8-10'	ea	25	240.00	268.46
10-12'	ea	9	270.00	300.51
12-14'	ea	5	300.00	343.25
14-16'	ea	4	330.00	388.66
16-18'	ea	1	360.00	454.10
18-20'	ea	1	390.00	514.20
Extr for drop into MH	ea	34	50.00	32.05
Cut-in to exist MH	ea	8	50.00	46.75
Pier, pipe supp, std, 2-4'	ea	1	25.00	100.17
4-6'	ea	1	30.00	126.88
Enc of Y branch, cl D conc	ea	240	4.00	6.02
Gate valve & box, 8"	ea	2	150.00	140.24
flanged, 6"	ea	5	125.00	97.50
Syphon inlet, north fork sy	ls	job	700.00	1,090
outlet	ls	job	700.00	954.00
inlet, south fork syphon	ls	job	700.00	1,090
outlet	ls	job	700.00	954.00
Conc, cl A	cy	10	60.00	47.70
cl B	cy	10	35.00	42.40
cl D	cy	50	30.00	40.28
cl E	cy	30	25.00	37.10
Subtotals	1C	$541,383	2	$637,672
*Alternate Items				
Pipe, asb cmt, 18"	lf	280	8.25	5.96
12"	lf	100	5.00	4.35
10"	lf	1,080	4.50	3.61
8"	lf	1,340	4.00	2.94
Division "B" Sewage Force Mains				
CIP, bell & spigot, 10"	lf	18,820*	5.00	6.85
8"	lf	12,810*	3.25	3.84
4"	lf	420*	2.75	2.68
mech joint, 4"	lf	960	1.75	1.34
Sleeve, CI, mech jt, 10"	ea	4	50.00	34.52
Fittings, CI, laid	lb	14,855	0.30	0.37
Air release riser, attach	ls	job	300.00	86.81
Air release valv assembly, manual	ea	4	100.00	66.78
Cut-in to exist MH	ea	4	50.00	40.07
Gate valve & box, 6"	ea	4	150.00	93.49
4"	ea	1	75.00	74.79
Line marker, conc	ea	2	30.00	9.35
Cover pipe under RR, 18"	lf	12	18.00	28.05
under hy, 18"	lf	42	17.00	30.72
12"	lf	22	15.00	18.04
Extra for CI bore, 6"	lf	16	3.00	10.68
Crushed rock in trench	t	980	2.25	2.61
Excav, solid rock	cy	550	15.00	13.36
Extra depth trench	cy	370	4.00	0.88
Conc, cl A	cy	2	60.00	40.75
cl B	cy	2	40.00	39.41
cl D	cy	3	35.00	37.40
cl E	cy	3	25.00	35.40
Subtotals	1C	$147,832	2	$185,472
* Alternate Items				
Pipe, asb cmt, 10"	lf	18,820	4.50	5.52
8"	lf	12,810	2.25	3.17
4"	lf	420	1.65	2.20
Crushed rock pipe bedding	t	140	2.25	2.41
Subtotals Div "B" with alt items	1	$128,665	2	$154,788
Division "C" Paving Replacement**				
Conc driv or walk, 4"	lf	2,320	2.50	2.14
curb & gutt	lf	150	3.00	3.39
Conc, 10½"	lf	85	5.00	8.01
Bit pave, temp, repl	lf	30,800	1.20	1.00
Bit on conc repl	lf	82	5.00	0.94
Crushed rock for stabiln	t	200	3.00	2.67
Subtotals	1C	$44,645	2	$37,865

* Subject to elimination from contract by owner

Time to Complete: 365 calendar days
Liquidated damages: $100 per day

THREADED RODS. Bethlehem Threaded Rods are supplied with either cut threads or rolled threads. The cut-thread rods come plain or upset, in thread diameters up to and including 4½ in. Rolled-thread rods are furnished in thread diameters up to and including 1½ in. Both types come in lengths to meet job requirements.

NEED CONSTRUCTION FASTENERS?

If you are looking for construction fasteners, either in the types shown here or in others, get in touch with Bethlehem. We specialize in fasteners manufacture, so there's a good chance that we may have the style and size you want in stock, or can make it for you promptly. Just telephone the nearest Bethlehem sales office.

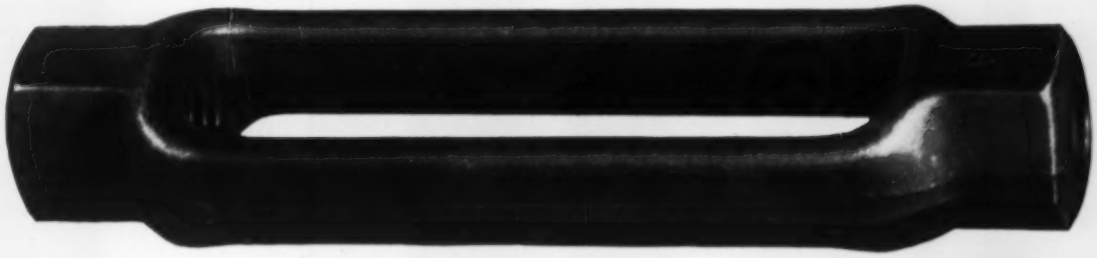
BETHLEHEM STEEL COMPANY
BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

RIVETS. Bethlehem Rivets come in small and large styles. Small rivets are made in diameters 7/16 in. and smaller, in lengths 6 in. and shorter, and with button, cone, countersunk, pan and flat heads.

Large rivets come in sizes from ½ in. to 1¾ in., and in lengths 2 in. and longer, in steps of ¼ in. Furnished with countersunk, round-top countersunk, button, high-button, cone and pan heads. Also swell neck.

TURNBUCKLES. All diameters from ⅜ in. to 2⅝ in., inclusive, with 6-in. openings between heads. Also furnished with 12-in. openings in sizes from ⅝ in. to 1½ in., inclusive. Hexagon ends. Right- or left-hand threads, with or without stub ends.



BETHLEHEM STEEL

BETHLEHEM STEEL

Materials and Labor Prices — Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES:

- * Oct. 18 — Wood Products, Glass, Explosives, Chemicals
- * Oct. 25 — Clay Products, Lime, Plaster, Paint, Roofing
- * Nov. 1 — Wage Rates, Building Board, Lath, Insulation
- * Nov. 8 — Cement, Aggregate, Ready-mixed Concrete, Asphalt

IRON AND STEEL PRODUCTS — PER 100 LBS. BASE MILL PRICES

	STRUCT SHAPES—	PLATE CARBON STEEL	REINF BARS billet	RIVETS ½-in. struc- tural	SHEET PILING	STEEL RAILS Per Net Ton Standard	STEEL RAILS Per Net Ton Light	TRACK SUPPLIES Angle Bars	TRACK SUPPLIES Std Spikes	TRACK SUPPLIES Tie Plates	TRACK SUPPLIES Track Bolts
Birmingham Area	$5.00	$4.85	$5.075	$10.85	.....	$101.50	$120.00	$6.35	$8.775	$6.025	.....
Chicago Area	5.00	4.85	5.075	10.85	$5.90	101.50	120.00	6.35	8.775	6.025	.....
Pittsburgh Area	5.00	4.85	5.075	10.85	5.90	101.50	120.00	6.35	8.775	6.025	$13.10
Buffalo Area	5.00	4.85	5.075	10.85	5.90	101.50	120.00	6.35	8.775	6.025	13.10
Cleveland	.....	.....	5.075	10.85	5.90	.....	.....	.....	.....	.....	13.10
Youngstown Area	.....	.....	5.075	.....	.....	.....	.....	.....	8.775	.....	.....
Geneva	5.00	4.85	5.175	.....	.....	.....	.....	.....	.....	.....	.....
Los Angeles	5.70	.....	5.775	.....	5.90	.....	.....	.....	8.775	.....	.....
Pueblo	.....	.....	.....	.....	.....	.....	.....	6.35	8.775	6.025	.....

IRON AND STEEL PRODUCTS — F.O.B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES Per 100 lb. base price	REINFORCING BARS Per 100 lb., base price 5 tons to carload lot New billet	REINFORCING BARS Rail steel	EXPANDED METAL LATH Per 100 sq. yd., carload lots Std. diamond mesh, 3.4 lb.	EXPANDED METAL LATH Std. ribbed 3.4 lb.	WELDED FABRIC REINFORCING Per 100 sq ft., carload lots fob mill
Atlanta	$9.50	.....	$8.90e	$49.50	$54.00	
Baltimore	8.67	8.10j	.....	42.00	46.50	
Birmingham	8.05d	7.91f	7.91f	65.00p	71.00p	
Boston	8.90a	8.44	8.44	50.90	55.85	4 × 16 in., No. 8 & 10 wires—
Chicago	8.05	6.81gu	6.81gu	49.00‡	60.00‡	Joliet, Ill., Donora, Pa., Monessen, Pa. $3.66
Cincinnati	8.70ak	7.69ra	.....	45.00mn	49.50mn	
Cleveland	8.38	6.79c	.....	43.50‡	48.00‡	4 × 12 in., No. 8 & 12 wires—
Dallas	9.45	8.25	8.25	49.00	52.00	Joliet, Ill., Donora, Pa., Monessen, Pa. $3.43
Denver	9.60	8.45c	.....	57.00n	63.00n	
Detroit	8.55	8.13	.....	56.00	63.00	6 × 6 in., No. 6 & 6 wires—
Kansas City	8.87a	8.73	.....	49.00	60.00	Joliet, Ill., Donora, Pa., Monessen, Pa. $3.64
Los Angeles	8.70fd	8.15	.....	57.50	63.50	
Minneapolis	8.255d	8.76b	8.76b	45.00*	49.50*	
Montreal	8-8.75aC/8.05-8.45A	7.75/8.95k	7.75/8.95	65.70A	70.20A	
New Orleans	.....	7.65akx	.....	45.50	50.00	
New York	8.71	7.93y**	7.93y**	47.50no	54.50no	
Philadelphia	8.04	7.14	.....	42.50‡	47.00‡	
Pittsburgh	7.45	6.57**	.....	42.50	47.00	
St. Louis	8.48a	7.90c	7.90c	50.50‡	61.50‡	
San Francisco	8.95	8.90j	.....	47.50	53.00	
Seattle	9.15	8.35*	.....	62.00nr	68.00nr	
Toronto	845*w	7.60	7.60	56.00mq	59.00mq	

Quantity extras, per cwt.: under 100t, +$1; 100-399t, +50¢; 400-999t, +35¢; 1000-1999t, +10¢; 2000-4999t, base prices; 5000-9999t, −10¢; 10,000-19,999t, −30¢; 20,000-29,999t, −50¢; 30,000 and up, −70¢

EXTRAS, per cwt.—Quantity: less than 700t, +40¢; 700-1499t, +25¢; 1500-2999t, +10¢; 3000-7999t, #3, #4, +$2.20; #5, +$1.10; #6, +50¢; #7, +43¢; #8, #9, #10, #11, +35¢. Bending: bears, +50¢; light, +$3 (except in New York City and surrounding metropolitan area where bending must be done on the job). Engineering (details and placing from designs by others): over 500 tons, +45¢; 200-500 tons, +50¢ but not over $4500; 20-200 tons, +60¢ but not over $2000; 5-20 tons, +70¢ but not over $240; under 5 tons, +80¢ but not over $70. Design only: +60¢.

*‡ Delivered *a 2000-9999t *b 10,000-19,999t, fob city *c 20 tons or over *d 10,000-19,999t *e Intermediate struct'l *f Incl. delivering in free zone *g CL *h list price; dominion tax exempt; add provincial and municipal taxes *i add dominion, provincial and municipal sales taxes *j Intermediate and hard grade *k fob city *l delivered; contractor to do unloading *m copper alloy *n LCL *o asphalt coated *p del. of 500 sq. yd. or more. *q 2 lb *r 2% off for cash *s 2,000-4,999t *t add 15¢ del. *u add 6.25¢ switch *v Incl 15¢ del. *w Eff 8/30/56; $7.50 eff 7/1/55 to 8/2/56 *x add 5¢ switch *y add 30¢ del. *z add 10¢ del. *A American made. *C Canadian made. ** Aver. of Canadian & American. *** 4 tons

PLUMBING, HEATING, WATER, SEWER AND DRAIN PIPE

	C. I. PIPE PRICE INDEXa	ASBESTOS CEMENT PIPE per lin. ft. f.o.b. city 6" Pr Cl. 150	ASBESTOS CEMENT PIPE per lin. ft. f.o.b. city 12" Sew Cl. 1	VITRIFIED SEWER PIPE Per foot, Delivered ASTM C13-44T std. 8 in. s.s.	std. 12 in. s.s.	24 in. ds.	36 in. ds.	CLAY DRAIN TILE ASTM C4-24 PER 1,000 ft., carload lots, f.o.b. 8 in.	8 in.	CONCRETE SEWER PIPE Per ft., delivered: ASTMC 14-41 12 in.	24 in.
Atlanta	123.5	$1.64	$2.68	$.55	$1.30	$4.95	$12.25	$225.00		$0.88m	$3.80m
Baltimore	132.9	1.64	2.46*	.665	1.28	5.08s	12.71	187.80	$289.20	1.01	2.75m
Birmingham	119.0	1.64	2.68	.44	.81	3.55w	10.37w	260.00‡	440.00‡	1.90m	4.00
Boston	135.6	1.66	2.46	.785qrt	1.502qrt	6.211qrt		203.40r	312.60r	1.60mg	3.80mg
Chicago	133.4	1.64	2.46	.93m	1.78m	7.52m	21.16m	220.00m	330.00m	1.30	4.00
Cincinnati	128.2	1.66	2.55	.665t	1.282St	4.905t	12.505	240.00	370.00	.85m	3.25m
Cleveland	134.2	1.66	2.55	.587e	1.0935e	4.545t	11.787t	149.40m	231.60m	.85m	3.50m
Dallas	130.5	1.66	2.80	.439	.799	4.00b	9.17b	.....	.....	.63	1.85
Denver	140.1	1.73	2.80	.47m	.84m	3.73m	.....	.....	.....	.74m	2.50m
Detroit	134.5	1.66	2.55	.85	1.60	6.45	17.50	240.00m	370.00m	.95	3.82
Kansas City	131.1	1.66	2.55	.61	1.105	4.54	12.75	260.00	485.00	.90	2.90
Los Angeles	140.2	1.73	2.46	.67t	1.46t	5.97t	14.80t	228.20t	348.90t	1.02	3.02f
Minneapolis	142.0	1.68	2.68	.83mo	1.50mo	6.50mo		.....	.....	1.76h	5.74h
Montreal	.....	.....	.....	1.02u	1.80u	6.30u	12.00u	.....	.....	1.17h	3.11j
New Orleans	126.1	1.64	2.68	.51	.925	5.18	.....	350.00p	550.00p	.75	2.50
New York	131.4	1.66	2.46	.99	1.88	7.37	19.06	.....	.....	1.50	3.00
Philadelphia	130.8	1.64	2.46	.65	1.25	4.95v	12.65v	300.00‡	350.00‡	1.60h	3.95h
Pittsburgh	135.3	1.66	2.46	.468m	.864m	3.86m	9.78m	152.00	244.00	1.05h	2.50h
St. Louis	129.6	1.64	2.55	.59	1.08	4.45	10.80	180.00t	380.00t	1.45tl	3.10tl
San Francisco	140.2	1.73	2.46	.74d	1.62d	6.59d	16.47d	320.00t	530.00t	1.05m	3.30m
Seattle	140.8	1.73	2.46	.666	1.26b	6.34	17.90	205.00c		1.00k	3.10k
Toronto	.....	.....	.....	.76	1.425	6.00	.....	157.00	280.00	.87	3.05

*‡ Delivered. *a PRICE INDEXES for CENTRIFUGAL CAST IRON PIPE (Include carload freight allowed to city). These also serve as the HISTORICAL RECORD of THE $ PER NET TON PRICE of CLASS B, B&S, PIT CAST IRON PIPE. F.O.B. Foundry Price Indexes Birmingham, Ala., 119.0; Burlington, N. J., 127.6. *b Extra strength ASTM C 200-44T *c 4-in., $113 *d 55361-A *e 30-in. *f 21 in. *g culvert pipe; reinforced, ASTM C 76-41 *h reinforced, ASTM C 75-41 *i reinforced, ASTM C 76-37 *j centrispun; no standard specs. in Canada *k 2% off for cash *l fob plant *m truck delivery *n LCL delivered, fob truck *o listed price based on LCL (no min.) *p freight allowed to destination in city *q ASTM C 13-40 *r CL fob origin, freight allowed *s 2 ft lengths *t 3 ft lengths *u CESA A 60-1941 specs. used *v standard strength *w as; add 20% for d.s. * Eff 9/56

***WROUGHT STEEL PIPE** (Full standard weight) Discount from list; see footnote

	Mill	Black %	Galv. %
3½ to 8 in., Lap Weld†	Lorain, Ohio	13.50s	+0.75s
	Alquippa, Pa	7.50s	+11.25
	Sparrows Pt., Md	.....	.....
3½ & 3 in., Butt Weld†	Beaver, W. Va	13.50d	+0.75d
	Youngstown, O	9.25	+6.25
	Indiana Harbor, Ind	12.50ab	+6.25a
2½ in.	Sharon, Pa	13.50s	+4.25s
	Wheatland, Pa	13.50	+2.50d
	Etna, Pa	11.75d	+17.75ab
	Fontana, Calif	10.50b	+7.75b

† Threaded and coupled. a 3½ to 4 in. b 2½ to 6 in. c 8 in. d 6 in. s Continuous weld.

*** WROUGHT STEEL PIPE:** Deduct discounts shown above from the following standard list consumers carload prices to get mill price. List prices per ft. (based on approx. 3200 per net ton): Butt Weld ⅛ in., 51¢; ¼ in., 6¢; ⅜ in., 6¢; ½ in., 8½¢; ¾ in., 11½¢; 1 in., 17¢; 1¼ in., 23¢; 1½ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 78½¢. Lap Weld 3½ in., 92¢; 4 in., $1.09; 5 in., $1.48; 6 in., $1.92. Add freight rates plus 3% transportation tax to get destination price.

WROUGHT IRON PIPE: List prices per ft. same as for wrought steelpipe, but add following "discounts" to get Pittsburgh mill price: Butt Weld—1 in. black, + 65.54, galv. + 95.77; 1¼ in. black, + 65.54, galv. + 95.23; 1½ in. black, + 61.29 galv. + 91.22; Lap Weld—2½ in. to 3 in. black + 67.95 galv. + 95.77; 4½ in. to 6 in. black + 64.74 galv. + 90.6. Add freight rates plus 3% transportation tax to get destination price.

CLAY PIPE HELPS PROTECT

$30,000,000 CHICAGO APARTMENT INVESTMENT

LAKE MEADOWS, a 100-acre project now underway in Chicago, will include at least 1600 apartments when construction is completed. They will be housed in four 21-story buildings, five 12-story buildings, and 12 duplex apartment buildings, all served by a central heating plant. The project is sewered by Clay Pipe in diameters from 6-inch to 18-inch, tied into the municipal mains. Large lawn and park areas surround the buildings, and a 17-acre shopping center is located on the grounds.

Where public health is at stake, Clay Pipe is invariably the first-choice sewerage material. It can't wear out, because it's chemically inert—completely unaffected by corrosive acids and gases found in sewer wastes. Whether your project is big or small, it pays to play safe. Don't gamble with public health —specify Vitrified Clay Pipe, and be *sure*.

Lake Meadows was designed by Skidmore, Owings & Merrill and constructed by the Turner Construction Co. and S. N. Nielsen Co. Clay Pipe was installed by Economy Plumbing & Heating under the supervision of George Beck.

NATIONAL CLAY PIPE MANUFACTURERS, INC.
1820 N. Street, N.W., Washington 6, D. C.

206 Connally Bldg., Atlanta 3, Ga.
100 N. LaSalle St., Rm. 2100, Chicago 2, Ill.
703 Ninth & Hill Bldg., Los Angeles 15, Calif.
311 High Long Bldg., 5 E. Long St., Columbus 15, Ohio

Vitrified CLAY PIPE

C-1155-E

Progress in Public Health - Through Clay Pipe Research

A Moretrench Wellpoint System was used. It pumped 9000 GPM keeping 35′ of water out of coarse gravel and sand.

Project: Sewage Treatment Plant, Middletown, Ohio

Contractor: H. W. Miller Const. Co., Inc., Covington, Ky.

If you've got a pumping problem, we know how to solve it.
Write, phone, wire our nearest office for action.

MORETRENCH CORPORATION

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Western Representative: Andrews Machinery of Washington, Inc., Seattle 4, Washington

Canadian Representative: Geo. W. CROTHERS Limited, Toronto, Ontario

Brazilian Representative: Oscar Taves & Co., Ltd., Rio de Janeiro

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, L. M. FELIX, M. E. SCIORRA, F. S. DEMBEK, Reports.
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

BUILDINGS—BA

▲ **N. H., Hanover**—DORMITORIES—BA 10/16—Trustees Dartmouth College, Hanover, 4 dormitory units. $1,500,000. Plans deposit $100. Campbell & Aldrich, 38 Newbury St., Boston, Mass., archts. (Correction—bid date). CD 9/28.

Conn., Avon—SCHOOL—BA 10/18—Town, School Bldg. Comn., Old Town Hall, Junior High School, Site Rte. 167. $825,000. Extended date. Plans deposit $50. Carl J. Malmfeldt Assocs., 36 Pearl St., Hartford, archts. CD 9/26.

▲ **Conn., Meriden**—SCHOOL—BA 10/29—City Bd. Educ., 22 Liberty St., Orvill H. Platt West Side Senior High School, Coe Ave. and Oregon Rd. $2,600,000. Plans deposit $50. Extended date. Willard Wilkins, 945 Asylum Ave., Hartford, arch. CD 9/27.

▲ **Conn., Storrs**—SCHOOL—BA 10/31—State P. Wks. Dpt., 165 Capitol Ave., Hartford, Proj. BI-D-198, Junior-Senior High School, University of Conn. $1,600,000. Plans deposit $35. Robt. C. May, 967 Farmington Ave., West Hartford, archt. CD 5/31.

HEAVY CONSTRUCTION—LB & CA

MASSACHUSETTS—Commonwealth of Mass., Dpt. Pub. Wks., 100 Nashua St., Boston,
Kirby Constr. Co., Ashland St., Manchester, Mass. LB $232,456, est. $236,718. steel stringer bridge, Southbridge St., Worcester. Bids Sept. 25. CD 9/11.

▲† **U. S. Eng.**, 111 E. 16 St., New York 3, N. Y. cancelled bids to have been opened about Oct. 4, flood control, Proj. Unit No. 4, North Adams, MASSACHUSETTS. CD 8/21.

MASSACHUSETTS—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston,
Campanella & Cardi Constr. Co., 780 Jefferson Blvd., Warwick, R. I. LB $156,198, est. $167,750. ltg. work Acushnet Ave. Rte. 140, New Bedford. Bids Sept. 25. CD 9/11.

Hydro Construction Co., 2315 Post Rd., Fairfield, Conn., LB $285,260, est. $300,000. extra high service water supply main, etc., BRISTOL, CONN. City Bd. Water Comrs., 119 Riverside Ave., Bristol, Conn. Bids Sept. 25.

BUILDINGS—LB & CA

▲ **Turner Constr. Co.**, 38 Newbury St., Boston, Mass. CA Approx. $4,000,000. OFFICE "Godfrey L. Cabot Bldg.", 89-107 Federal St., BOSTON, MASS. New England Land Co., 250 Boylston St., Boston, Mass. Edwin T. Steffian, 11 Beacon St., Boston, Mass., archt. for preliminary plans.

Owner, c/o Al Pearl, agt., Ocean View Shores, Rock Hill Rd., Plymouth, Mass. Owner Builds. $360,000. Shore RESIDENTIAL DEVELOPMENT, 100 houses, "Ocean View Shores" off Rocky Hill Rd. 3 mi. shoreline, PLYMOUTH, MASS.

P. Joseph Delory, Inc., 42 Wolcott St., Everett, Mass. Owner Builds. Approx. $348,000. RESIDENTIAL DEVELOPMENT "Emerson Acres", 24 houses, Main St.-Rte. 1A, Second Sect., ROWLEY, MASS.

Park Constr. Co., Inc., 40 Court St., Boston, Mass. CA $727,933, est. $700,000. Vocational High SCHOOL, Church and Summer Sts., WALTHAM, MASS. City, City Hall, Waltham, Mass. CD 9/12

▲ **Cedar Ridge Homes**, c/o Harry Bennett & Assocs., High Ridge Rd., Stamford, Conn. Owner Builds. $3,750,000. 150 HOUSES on tract on High Ridge Rd., STAMFORD, CONN.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

N. Y., Idlewild—UTILITIES—BA 10/23—Office Chief Engineer Port of New York Auth., 111 Eighth Ave., New York, Zone 11, furnishing, installation utilities to site of Bldg. No. 189, New York International Airport. Plans deposit $30. CD 2/25/53.

▲ **NEW JERSEY-PENNSYLVANIA**—BA 10/24—Delaware River Joint Toll Bridge Comn., Administration Bldg., Morrisville, Pa.,
Northampton Co., Pa. and Warren Co., N. J.—Delaware River Bridge between Portland, Pa. and Columbia, N. J. Alternate designs as Contract 190 4-span continuous plate girder structure and/or Contract 191 4-span post-tensioned concrete box girder structure. Plans deposit $10.

BUILDINGS—BA

N. Y., Ithaca—SCHOOL—BA 10/16—Central School Dist., Cayuga Htgs. Elementary School, Sargent, Webster, Crenshaw & Folley, 2112 Erie Blvd. E., Syracuse, archts.

▲ **N. Y., New York**—HOSPITAL—BA 10/25—New York Foundling Hospital, 175 E. 68 St., Zone 21, 11 story foundling hospital, 1175-1185 Third Ave. between 68 and 69 Sts. $4,000,000. Eggers & Higgins, 100 E. 42 St., New York, Zone 17, archts. Foundation and excavation awarded to Thomas Crimmins Contg. Co., 624 Madison Ave., New York 22, N. Y. CD 9/20/55.

▲ **N. Y., Brooklyn**—SCHOOL—BA 10/30—Director Bureau Constr., 42-15 Crescent St., Long Island City, Zone 1, general constr. of new addn. to and modernization of existing Junior High School 50, S. Third St. and Driggs Ave. Plans deposit $25. CD 2/29.

Md., Hagerstown—SCHOOL—BA 11/1—Washington County Bd. Educ., constr. N. Hagerstown High School, Plans deposit $40. McLeod & Ferrara, 1200 18th St. N. W., Wash., D. C., archts. CD 8/18/55.

† **D. C., Wash.**—ANNEX—BA On Or About 11/6—U. S. Eng., First and Douglas Sts. N. W., Wash. 25, D. C., renovation of Barnes Annex Building, at U. S. Soldiers Home, CIVENG-49-080-57-6-(30). CD 10/31/55.

HEAVY CONSTRUCTION—LB & CA

▲ **NEW YORK**—Dpt. P. Wks., The Gov. Alfred E. Smith State Office Bldg., Albany,
A. A. Johnson Corp. & P. Kiewit Sons' Co., 347 Madison Ave., New York, N. Y. LB $5,767,495 (5 bidders) concrete substructure work on State Thruway's mile-long $20 million bridge across Hudson River about 1½ mi. south of Selkirk and Castleton in Albany and Rensselaer Counties. Bids Sept. 27. CD 9/4.

▲ **NEW YORK**—Dpt. P. Wks., The Gov. Alfred E. Smith State Office Bldg., Albany,
N. Y.—D. A. Collins, 55 N. Main St., Mechanicville, N. Y. LB $1,018,707 (2 bidders) constr. 2.49 mi. sect. of north-south arterial route (Rte. 57) and 0.42 mi. access roads in city of Fulton, Oswego Co.;
N. Y.—Lane Constr. Corp., 965 E. Main St., Meriden, Conn. LB $3,940,306 (13 bidders) constr. 3.13 mi. four-lane divided portion of State Thruway's proposed 24 mi. Berkshire Sect. that eventually will link the thruway's main 427 mi. New York-to-Buffalo route with Massachusetts Turnpike, Rensselaer Co.; LB $3,580,433 (4 bidders) constr. on northeastern outskirts of Rochester of 2.53 mi. four-lane divided sect. of Sea Breeze Expressway from south end of an already completed Expressway segment north of Ridge Rd. southward on new location across Ridge Rd., Bayview Rd. and Empire Blvd. to Winton Rd., Monroe Co.;
N. Y.—Louis Mayerson, Inc., 36 State St., Albany, N. Y. LB $1,389,049 (2 bidders) reconstr. 7.38 mi. Rte. 28N, starting in Aiden Lair and exten. northwestward toward Newcomb to the Tahawus Rd. intersection, Essex Co.;
N. Y.—Leon Reynolds Constr. Corp., Broadalbin, N. Y. LB $353,834 (2 bidders) constr. 1.67 mi. Tahawus-Schroon River Co. Rd. (Blue Ridge Hy.) starting about 1 mi. north of intersection of Rte. 28 N and Tahawus Rd. in town of Newcomb, and exten. eastward to a point just east of Newcomb-Minerva town line, Essex Co.;
N. Y.—John Arborio, Inc., West Cedar St., Poughkeepsie, N. Y. LB $362,914 (4 bidders) wid'n., resurf. 4.8 mi. of Rte. 300, starting near Rte. 32 intersection northwest of Newburg and exten. northwestward over State Thruway to Orange-Ulster Co. line, Orange Co.;
N. Y.—received no bids Sept. 27, constr. 0.86 mi. six-lane divided sect. of Horace Harding Expressway and 3.03 mi. access roads, from Grand Central Parkway to 136 St. incl. three bridges and one pedestrian overpass Queens Co., $6,244,000. CD 9/4.

† **U. S. Eng.**, Engineer Park, Niagara and Bridge Sts., Buffalo 7, N. Y., cancelled bids to have been opened about Sept. 12, dredging South Cornwall Island Channel, approx. 5,000,000 cu. yd. excav., part of St. Lawrence River lying south of Cornwall Island and east of Pollys Gut to point just east of Raquette Point, 8 mi. northeast of Massena, 1¼ mi. north of Rooseveltown, both in St. Lawrence Co., St. Lawrence Seaway, St. Lawrence River, for St. Lawrence Seaway Development Corp., CIVENG-30-023-57-16, NEW YORK. CD 8/8.

Tree Preservation Co., Inc., Elmsford, N. Y. LB $257,714, clearing and chemical treatment of right of way of transmission lines N. Y. Spec. No. PA-6-11, St. Lawrence Contr. No. T1, NEW YORK. The Power Authority of the State of New York, 270 Broadway, New York, N. Y. Bids Sept. 27. CD 9/12.

▲ **Manhattan Water Works, Inc.**, 1318 Randall Ave., New York 59, N. Y. LB $1,574,590. Contr. No. 195, combined relief sewers, NEW YORK, N. Y. President Manhattan Boro, Municipal Bldg., New York 7, N. Y. Bids Sept. 19. CD 8/28.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,
Hempt Brothers, R. D. 1, Camp Hill, Pa. CA $1,230,282. (6 bidders) constr. 17,717 ft. divided by, of rein.-con. 24 ft. wide each side 20 ft. divisor, Huntingdon and Latimore Twps., T.R. 15-94, Adams Co. Bids Sept. 14, awarded Sept. 29. CD 9/19, under LB.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,
Worthington Constr. Co., Box 95, Line Lexington, Pa. CA $1,418,775 (11 bidders) constr. 13,566 ft. divided by, of rein.-con. 24 ft. wide 20 ft. earth divisor, Greenwich, Maxatawny and Weisenberg Twps., T.R. 22, Berks and Lehigh Counties. Bids Sept. 14, awarded Sept. 27. CD 9/19, under LB.

DELAWARE—State Hy. Dpt., Hy. Dpt. Admin. Bldg., Dover,
Wilson Contg. Co., New Castle, Del., CA $778,705. approach roadway to Walnut St. Bridge over Christina River in Wilmington, New Castle Co. Bids Aug. 29. CD 9/5, under LB.

DELAWARE—State Hy. Dpt., Hy. Dpt. Admin. Bldg., Dover,
James Julian, Inc., 405 du Pont Rd., Elsmere, Del., LB $645,628. 2.28 mi. resurf., hot mix asph., west of Seaford, F-181 (3), Sussex Co. Bids Sept. 26. CD 9/18.

BUILDINGS—LB & CA

McManus, Longe & Brockwehl, Inc., P. O. Box 5067, Albany, N. Y. LB $609,830. general constr. Bethlehem Central Junior High SCHOOL, DELMAR, N. Y. Bd. Educ. Central School Dist. No. 1, Delmar, N. Y. Henry L. Blatner, 11 Pearl St., Albany, N. Y., archt. Bids Sept. 18. CD 6/12/51.

▲ **Vincent J. Smith, Inc.**, P. O. Box 551, Binghamton, N. Y. CA $1,480,000. LIBRARY, HAMILTON, N. Y. Colgate University, Hamilton, N. Y. CD 2/27.

▲ **Lasker-Goldman Corp.**, 50 E. 42 St., New York 17, N. Y. LB $2,775,000. SENIOR HIGH SCHOOL McKay Ave. and Oakwood Rd., HUNTINGTON, N. Y. Bd. Educ., Union Free School Dist. 3, town of Huntington, Huntington, N. Y. Bids Sept. 20. CD 8/14.

Bd. Fire Comrs., Jericho Fire Dist., Hicksville-Jericho Rd., Jericho, N. Y., rejected bids Sept. 24, general constr., plumbing and sanitary work, heating and ventilating work, electrical work for FIREHOUSE on Hicksville-Jericho Rd., JERICHO, N. Y. CD 9/6.

▲ **Frouge Constr. Co., Inc.**, 141 North Ave., Bridgeport 6, Conn. CA Est. $1,000,000. 12 story APARTMENT, 34-50 E. 74 St., NEW YORK, N. Y. Syndicate c/o Slingerland & Boass, 1860 Broadway, New York, N. Y. CD 3/21.

McKay Constr. Co., Oneida, N. Y. LB $451,484. general constr. SCHOOL, Booth St., UTICA, N. Y. Bd. Educ., Utica, N. Y. Bids Sept. 27. CD 9/13.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.
BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.
SOON LETS CONTRACT: SLC

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily Issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

† Federal Government
▲ Project of $1,000,000 or over.
ENR Engineering News-Record
CD Construction Daily

For additional reports see Construction Daily.

▲ **Caye Constr. Co.**, Inc., 356 Fulton St., Brooklyn 1, N. Y. CA **$4,300,000**. HOSPITAL, Capree Parkway and Montauk Hy., WEST ISLIP, N. Y. St. Charles General Hospital, 1000 Montauk Parkway, West Islip, N. Y. CD 8/24.

▲ **O. A. Peterson Constr. Co.**, 78 N. Willow Ave., Montclair, N. J. CA, Est. **$1,000,000**. CHURCH, Brookdale section of BLOOMFIELD, N. J. St. Thomas the Apostle Church, Byrd Ave., Bloomfield, N. J. CD 12/21.

▲ **Feinberg & Son**, 1212 Lexington Ave., Lakewood, N. J., CA **$2,500,000**. new section of 143 HOUSES, in Aldrich Estates Section of Howell Twp., FARMINGDALE, N. J. Max Lipschitz, Jr. R. D. 2, Lakewood, N. J., and A. Feinberg, 1212 Lexington Ave., Lakewood, N. J. James W. Mancuso, 9 Memorial Parkway, Long Branch, N. J., archt.

▲ **Levin-Sagner, Inc.**, 2 Broad Lawn Dr., Livingston, N. J., Owner Builds. $5,000,000. 250 HOME DEVELOPMENT, "Collins Estates" 1 mi. out of Northfield Center, LIVINGSTON, N. J. Blake & Rothman, 520 Westminister Ave., Elizabeth, N. J., archts.

▲ **Oak Hills Builders, (Robert Eisener)**, Prospect Ave., Red Bank, N. J., Owner Builds. $2,800,000. 80 HOMES, Old Middletown Rd. on 580-acre tract, MIDDLETOWN, N. J. Harsen & Johns, Railroad and Summit Aves., Tenafly, N. J., archts.

▲ **Housman & Bush**, Terhune Dr., Pompton Lakes, N. J., Owner Builds, $1,125,000. 34 HOMES on Pines Lake Dr. and Indian Road, Wayne Hills, MOUNTAIN VIEW, N. J.

▲ **Briarcliff Homes**, c/o Gateway Realty Co., 1013 Clinton Ave., Irvington, N. J., Owner Builds. $2,450,000. 162 HOUSES on tract on Wilson Ave., NEW MONMOUTH, N. J.

▲ **Joseph Hayes & Peter Perrafranco**, 160 Hillside Ave., River Edge, N. J., Owner Builds. $2,000,000. 135 HOUSES, Midstream Road in Brock Twp., "Stratford Pine" POINT PLEASANT, N. J. Anthony Vandervliet, 261 Spring Valley Rd., Maywood, N. J., archt.

▲† **Standard Constr. Co.**, 1010 Vermont Ave. N.W., Wash., D. C., CA **$6,759,000**. Arthur Clapper DWELLINGS, DC 1-20, incl. 612-units, between 2 and 7 Sts. and Virginia Ave. and M St. S.E., WASH., D. C. National Capital Housing Auth., 1729 New York Ave. N.W., Wash., D. C. Bids Aug. 16. CD 8/20, under LB.

SOUTH

HEAVY CONSTRUCTION—BA

Va., **Vienna**—BA 10/15—Town, Town Hall, elevated steel water storage tank (a) 200,000 gal. (b) 250,000 gal. (c) 300,000 gal., at Tapawingo Rd. and Frederick St. S.W.

† **Florida**—PARK—BA 10/25—Bureau P. Rds., Dpt. Commerce, Office of Park Supt., Homestead, Proj. 1A3, Everglades National Park bridge with prestressed concrete superstructure or structural steel superstructure of 386 ft. length and 28 ft. roadway on concrete and steel pile substructure over Flamingo Canal, 0.095 mi., Monroe Co.; adv. ENR 10/11. CD 9/27, under LB.

BUILDINGS—BA

† **N. C., Durham**—TRAINING CENTER—BA 11/1—U. S. Eng., 308 Customhouse, Wilmington, 15,600 sq. ft. masonry training center; constr. approx. 4,800 sq. yd. b. conc. parking area paving and driveways, 1,000 lin. ft. concrete curb and gutters; 550 sq. yd. concrete sidewalks; site preparation, clearing, gurbbing and grading; constr. storm drainage sys., sanitary sewerage sys., water lines, electrical lines; flag pole and misc. items, ENG-31-075-57-10. CD 6/22, under LB.

HEAVY CONSTRUCTION—LB & CA

VIRGINIA—Commonwealth of Va., Dpt. Hys., Central Hy. Office Bldg., 1221 E. Broad St., Richmond,

Albert Bros. Contractors, Inc., P.O. Box 208, Salem, Va. and **McDowall & Wood, Inc.**, 1308 W. Main St., Salem, Va. CA **$616,149**. b. conc. and 2 bridges 0.66 mi. Rte. 60, State Proj. 2103-16-03-04. Fed. Proj. IN-040-1 (3), Alleghany Co. Bids Sept. 19. CD 9/24, under LB.

▲ **VIRGINIA**—The Richmond-Petersburg Turnpike Auth., 1015 E. Main St. or P. O. Box 1-R, Richmond,

Wiley N. Jackson Co., P. O. Box 1408, Roanoke, Va. LB **$2,712,175** (2 bidders) Cont. A-2-G, Sect. A, grading, drainage, paving, structures, approx. 0.41 mi. from Franklin to 13 Sts., City of Richmond. Bids Sept. 27. CD 9/14.

▲ **VIRGINIA**—The Richmond-Petersburg Turnpike Auth., 101 E. Main St., or P. O. Box 1-R, Richmond, Zone 2,

Blythe Bros. Co., P. O. Box 989, Charlotte, N. C. LB **$2,208,049** (5 bidders) Cont. No. D-2-G, Sect. D, grading, drainage, paving and structures from point 5,100 ft. south of Swift Creek to point 1,800 ft. north of Rte. 10. Chesterfield Co. Bids Sept. 27. CD 9/11.

† **J. L. Coe Constr. Co.**, P. O. Box 1881, Charlotte, N. C. LB **$412,977** (3 bidders) 110x114 ft. wood pile fdn., concrete caps, concrete walls gymnasium, Naval Air Station, NOy 91370, Spec. 48291, OCEANA, VA. P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk 11, Va. Bids Sept. 25. CD 9/5.

† **R. M. Cantrell & Sons**, Little River Turnpike, Annandale, Va., LB **$736,500** Item 1; LB **$714,000** Item 2; LB **$681,000**, Item 3, (8 bidders) utilities and site development of new administration and industrial area at Marine Corps Schools, NBy 2694, QUANTICO, VA. Dist. P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash., D. C. Bids Sept. 26. CD 9/4

▲† **Arundel Corp.**, Pier 2, Pratt St., Baltimore, Md., **L. E. Dixon Co.**, 409 S. California St., San Gabriel, Calif., and Hunkin-Conkey Constr. Co., 1740 E. 12 St., Cleveland, O. CA, **$16,015,785**. dam, Sutton Reservoir Proj., Elk River, Serial No. CIVENG-46-022-57-4, WEST VIRGINIA. U. S. Eng. 237 Fourth Ave., Huntington, W. Va. Bids Sept. 13. CD 9/18, under LB.

▲ **WEST VIRGINIA**—State Road Comn., Charleston, Zone 5,

W. Va.—**Boso & Ritchie, Inc.**, Ravenswood, W. Va. LB **$1,289,380**. traffic bound base, cr. b. conc. wearing bottom and base course 5.894 mi. Philippi-Belington Road, Proj. F 117 (7), Barbour Co.;

W. Va.—**Road Materials, Inc.**, Bluefield, W. Va. LB **$280,779**. traffic bound base, cr. b. conc. bottom and wearing course, Brush Fork-Virginia State Line Rd., Proj. S-651 (1), Mercer Co. Bids Sept. 25. CD 9/17.

▲ **MISSISSIPPI**—State Hy. Dpt., T. C. Robbins, dir., Jackson,

Miss.—**T. L. James & Co.**, Ruston, La. CA **$683,517**, est. $720,000. grade, box bridges, double bit. surf. tr. 2.122 mi. US Hy. No. 49 between Jackson and Flora, Hy. Proj. FO08-3 (1), Hinds Co.;

Miss.—**W. R. Aldrich & Co.**, 2493 Baywood Ave., Baton Rouge, La. CA **$471,439**, est. $550,000. grade, box bridge, bridges (incl. overpass) 10.209 mi. Miss. Hy. No. 19 between Ala.-Miss. State Line and Vimville, FO26-1 (3) and FG026-1 (4), Lauderdale Co.;

Miss.—**Boyd Constr. Co.**, Grenada, Miss., CA **$458,747**, est. $530,000. grade, box bridges, bridge 14.13 mi. US Hy. No. 49 between Jackson and Flora, FO08-3 (3), Hinds and Madison Counties;

Miss.—**Dye & Coggin**, Tupelo, Miss. CA **$169,297**, est. $185,000. grade, bridge, double bit. surf. tr. 2.928 mi. Miss. Hy. No. 6 between Plattersville and East Tupelo, S 0804 (2) A, Lee Co.;

Miss.—**M & W Constr. Co.**, Tupelo, Miss. CA **$221,117**, est. $240,000. grade, bridge grav. surf. course 3.153 mi. Miss. Hy. No. 17 between Black Hawk and Carrollton, ER-11 (1), S 0641 (5) A, S 0641 (6) A, Carroll Co.;

Miss.—**H. H. Metts, Contractor**, Louisville, Miss. CA **$87,571**, est. $105,000. grade, box bridge, temporary grav. surf. course 4.079 mi. Miss. Hy. No. 19 between west and Kosciusko, S0642 (4) A, Attala Co.;

Miss.—**Pigford-Noblin Constr. Co.**, Hy. 11 S, Meridian, Miss. CA **$807,939**, est. $900,000. grade, bridge, c. conc. 1.776 mi. U.S. Hy. No. 11 near Laurel, IN 092-2 (3) Contr. 1, Jones Co. Grand total $2,899,627. Bids Sept. 25. CD 9/14.

† **U. S. Eng.**, 2301 Grant St., Mobile 7, Ala., rejected bids Sept. 6, Schedule A, dredging in Gulfport Harbor, Miss., LB **$456,034**; Schedule C, dredging between Big Lagoon and Pensacola Bay, Fla., LB **$107,395**, CIVENG-01-076-57-7, MISSISSIPPI, ALABAMA AND FLORIDA. Will re-advertise. CD 8/23.

▲† **McWilliams Dredging Co., Div. Williams-McWilliams Industries, Inc.**, Box 584, New Orleans, La. CA **$1,176,363**, est. $1,064,311. Whiskey Bay Pilot Channel extension, St. Martin and Iberville Parishes, Inv. 57-46, LOUISIANA. U. S. Eng., foot of Prytania St., New Orleans, La. CD 9/19, under LB.

† **U. S. Eng.**, foot of Prytania St., New Orleans, La. rejected bids Sept. 18, Harvey Lock repairs, Inv. 57-21, LOUISIANA. Will re-advertise. CD 9/26, under LB.

BUILDINGS—LB & CA

Virginia Engineering Co., Inc., 80 29th St., Newport News, Va. LB **$547,000**. (6 bidders) ADMINISTRATION BLDG. and toll facilities, City of Hampton, Cont. No. B-4 (Hampton Roads Proj.) VIRGINIA. Commonwealth of Va., Dpt. Hys., Central Hy. Office Bldg., 1221 E. Broad St., Richmond, Va. Bids Sept. 26. CD 9/6.

▲ **Southern Engineering Corp.**, 8605 Cameron St., Silver Spring, Md., CA Total Est. **$4,000,000**. 235 HOMES, Franconia Rd., FAIRFAX, VA. Small & Greenberg, 8605 Cameron St., Silver Spring, Md. Jack C. Cohen, 7961 Eastern Ave., Silver Spring, Md., archt.

Sawyer Constr. Co., 1668 W. Pembroke Ave., Hampton, Va. LB **$598,000** (3 bidders) Whittaker Memorial HOSPITAL alterations, addns., NEWPORT NEWS, VA. City, City Hall, Newport News, Va. Williams, Coile & Blanchard, 3415 Virginia Ave., Newport News, Va., engrs.-archts. Bids Sept. 25.

▲ **J. A. Jones Constr. Co.**, 133 Ellis St., Atlanta, Ga., LB **$9,256,300** (6 bidders) construction only of lease-purchase project, Communicable DISEASE CENTER, ATLANTA, GA. General Services Admin. P. Bldgs. Service, Regional Office, 50 Seventh St. N.E., Atlanta, Ga. Bids Sept. 27. CD 8/9;

Robert E. McKee General Contracting Co., P.O. Drawer 2848, Dallas, Tex., LB **$11,655,000** (only bidder) construction and financing communicable disease center (Atlanta, Ga.).

▲ **Paul Smith Constr. Co.**, 310 N. Rome Ave., Tampa, Fla., CA, Est. **$2,500,000**. coil strip processing PLANT and WAREHOUSE, TAMPA, FLA. American Can Co., 100 Park Ave., New York, N. Y.

F. R. Hoar & Son, 2808 19 Pl., S., Birmingham, Ala., CA, **$637,988** four-unit JUNIOR HIGH SCHOOL Homewood, BIRMINGHAM, ALA. Jefferson Co. Bd. Educ., Court House, Birmingham, Ala. Awarded Sept. 28. CD 8/29.

▲ **Richardson Constr. Co.**, 3100 7 Ave. S., Birmingham, Ala. LB **$1,186,400**. (5 bidders) air-conditioning, remodeling and enlarging Municipal AUDITORIUM, BIRMINGHAM, ALA. City, City Hall, Birmingham, Ala. Bids Sept. 25. CD 8/27.

Combustion Engineering Inc., 1028 7 Ave. S., Birmingham, Ala., CA, **$500,000**. design and construct, furnishing, installing BOILERS at plant, WOODWARD, ALA. Woodward Iron Co., Woodward, Ala.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

† **O., Wilmington**—DINING HALL—BA On Or About 10/25—U. S. Eng., 237 Fourth Ave., Huntington, W. Va., 1 story, approx. 13,000 sq. ft. masonry block dining hall, Clinton County Air Force Base, ENG-46-022-57-10. $200,000-$500,000. CD 8/22/55.

▲ **O., Cleveland**—BA 10/29—Comrs. Cuyahoga Co., Court House, Zone 13, impr. Snow Rd. from State to point on Rockside Rd., 3,513 ft. east of Broadview by paving, grading, and constr. bridge over West Creek, Parma and Seven Hills. $1,013,000. Plans deposit $50. Albert S. Porter, c/o owner, co. engr. CD 3/9.

BUILDINGS—BA

Ill., **Kankakee**—STORE, etc.—BA 10/22—Sears Roebuck & Co., 925 S. Homan Ave., Chicago, 1 story, brick, 115,000 sq. ft. store, warehouse and service station, Meadowview Shopping Center. Dittrich & Gibson, 8 S. Michigan Ave., Chicago, archts.

O., **Cincinnati**—HIGH SCHOOL—BA 10/24—Southwest Local School Dist., Harrison, high school, West and Dry Fork Rd., elementary school addn., New Haven Rd. $944,000. Plans deposit $25. Rosendahl & Brown, 3426 Edwards Rd., archts.-engrs. CD 7/23, under LB.

O., **Wickliffe**—HIGH SCHOOL—BA 10/24—Bd. Educ., 29240 Euclid Ave., high school. $687,000. Plans deposit $35. Extended date. Outcalt, Guenther & Assoc., 13124 Shaker Square, Cleveland, Zone 20, archts. CD 9/6.

Ill., **Belleville**—SCHOOL—BA 10/28—Belleville Twp. High School Dist. 201, Bd. Educ. Dr. Hale O. Hall, supt., 2600 W. Main St., 2 story, brick, masonry blocks, steel, concrete high school addn. to main bldg. and cafeteria bldg., incl. library, 3 study halls, several laboratories, $350,000. Charles E. King & Wesley Charlton, 19A N. Illinois Ave., assoc. archts. CD 6/10/55.

O., **Beachwood**—SCHOOLS—BA 10/31—Bd. Educ., 24-601 Fairmount Blvd., Cleveland, Zone 21, Hilltop Elementary School, $425,000; Bryden Elementary School, $425,000. Plans deposit $35 each general; $30 each mechanicals. Fulton, Krinsky & DelaMotte, 6014 Euclid Ave., Cleveland, Zone 3, archts. CD 5/11.

▲ **Wis., Walworth**—SCHOOL—BA 11/7—Bd. Educ., Walworth, Union High School. $1,497,000. Plans deposit $50. Durrant & Berquist, 666 Loras Blvd., Dubuque, Iowa, archts. CD 1/31.

▲ **Wis., West Bend**—SCHOOL—BA 11/7—Bd. Educ., 710 4 Ave., West Bend, classroom, gymnasium and pool, high school addn. $1,300,000. Plans deposit $100. Herbst, Jacoby & Herbst, 1249 Franklin Pl., Milwaukee, archts. CD 9/28/55.

BUILDINGS—SLC

▲ **Ill., Chicago**—ASSEMBLY PLANT—Ford Motor Co., P. O. Box 117, Dearborn, Mich., soon lets contract 1 story, structural steel, Ford assembly plant, 126 St. and Torrence Ave. $4,000,000. CD 4/24.

▲ **Ill., Chicago**—GARAGE, etc.—Gale & Epstein, 231 S. La Salle St., soon lets contract 8 story, bsmnt., brick, steel garage and store, 222-32 S. Clark St. $1,500,000. Bruyn & Bryant, Inc., 322 W. Washington St., archts. Robt. E. Hattis, 223 W. Jackson Blvd., and Howard T. Fisher, 322 W. Washington St., engrs. CD 8/31.

HEAVY CONSTRUCTION—LB & CA

OHIO—State Hy. Dpt., Columbus, Zone 15,

rejected bids Sept. 18, Type T-35 and structure 5.317 mi. S. R. 88, Sections (7.04-11.93), Bristol and Mecca Twps., Trumbull Co., LB **$567,029**; Type T-35, 1.362 mi. C.R. No. 83, S-296 (4), North Leavitt Rd., Warren Twp., Trumbull Co., LB **$213,355**. CD 9/25, under LB.

Penker Constr. Co., 1030 Summer St., Cincinnati 4, O. CA **$581,484**. trunk sewer line from Bridgetown to Lawrence Rds., CINCINNATI, O. Comrs. Hamilton Co., Court House, Cincinnati, O. Bids Sept. 11, awarded Sept. 25. CD 8/8, under LB.

▲† **Bregman Constr. Co.**, 250 E. 43 St., New York, N. Y., CA **$1,088,350**. 3 underground storage structures, generator bldg., ready bldg., appurtenances near Tremont, Porter Co., INDIANA. U. S. Eng., 475 Merchandise Mart, Chicago 54, Ill. Bids Aug. 30. CD 9/13, under LB.

▲ **ILLINOIS**—Dpt. P. Wks. & Bldg. Div. Hys., Centennial Bldg., Springfield,

Ill.—**E. H. Swenson & Son**, 14 Henderson Ave., Joliet, Ill., LB **$195,651** (6 bidders) 8-span bridge and paved approaches SBI 53 at Lockport, Will Co.;

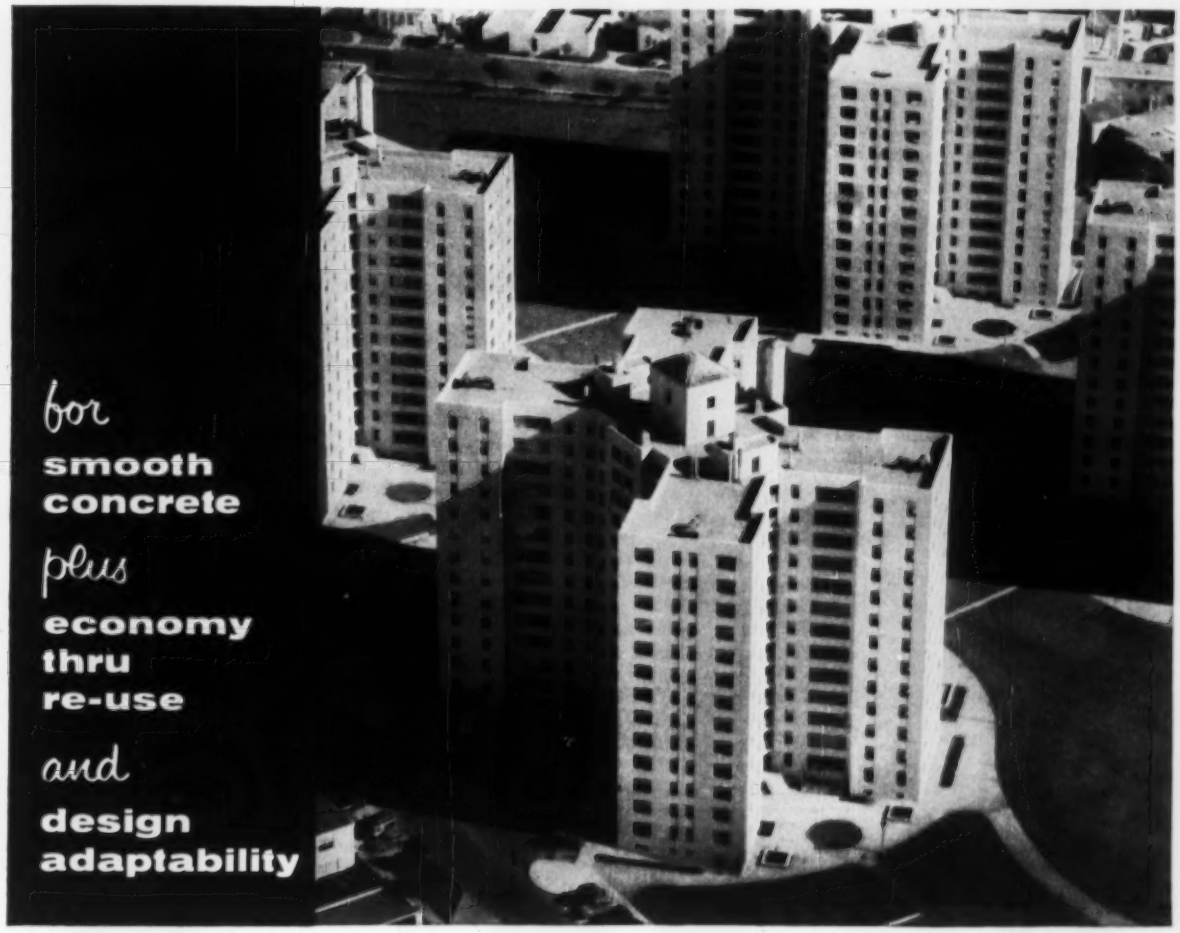
Ill.—**Industrial Constr. Co.**, 3050 4 Ave. S., Minneapolis, Minn., LB **$1,108,845** (2 bidders) structural steel erection for girder bridge over Illinois River at Peoria, Peoria and Tazewell Counties;

Ill.—**J. D. Barter Constr. Co.**, 215 S. Jackson St., Harrisburg, Ill., LB **$82,007** (5 bidders) I-beam bridge, FAS Rte. 1930, 2 mi. NW of Hamletburg, Pope Co. Bids Sept. 28. CD 9/19.

▲ **ILLINOIS**—Dpt. P. Wks. & Bldg., Div. Hys., Centennial Bldg., Springfield,

Ill.—**H. H. Hall Constr. Co.**, 211 S. 15 St., East St. Louis, Ill., LB **$260,936** (1 bidder) bit. surf. Ill. 127, west of Keysport east, Clinton Co.; LB **$163,144** (1 bidder) resurf. F.A. 152 from Hito U.S. 66 and bypass US 40 SE, Madison Co.; LB **$278,821** (1 bidder)

(Continued on page 116)



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(Continued from page 114)

b. conc. surf. Rt. 4, Wood River to Hartford, Madison Co.;

Ill.—**Gem Contracting Co.**, Moose Bldg., Quincy, Ill., LB $344,304 (3 bidders) wid'n. SBI 31, Clayton to east of county lines, Adams and Brown Counties;

Ill.—**Coggershall Constr. Co.**, Clayton, Ill., LB $153,960 (3 bidders) c. conc. surf. SBI 31 west of Clayton to east of county lines, Adams and Brown Counties;

Ill.—**Diamond Constr. Co.**, Quincy, Ill., LB $92,974 (2 bidders) bit. surf. tr. FAS 1589, Camp Point to Ill. Rt. 94, Adams Co.;

Ill.—**General Paving Co.**, 30 E. John St., Champaign, Ill. LB $803,879 (1 bidder) c. conc. west end Champaign Belt Line, Champaign Co.;

Ill.—**Whetzel Constr. Co.**, 201 N. Walnut St., Champaign, Ill., LB $132,966 resurf. of Main St. in City of Homer, SBI 49, Champaign Co.;

Ill.—**L & S Constr. Co.**, 4614 W. 5 Ave., Chicago, Ill., LB $118,250 (3 bidders) distr. 10 traffic signals at 7 intersections, Cook Co.;

Ill.—**Steward & Rank Co.**, 2125 Central Ave., Bettendorf, Iowa, LB $99,364 (7 bidders) grav. surf. course from U.S. 6 S.W. of Green Rock, Henry Co.;

Ill.—**Mautz & Oren, Inc.**, Effingham, Ill., LB $310,835 (1 bidder) resurf. SBI 33 and 130 in city of Newton, Jasper Co.;

Ill.—**E. A. Meyer Constr. Co.**, 1539 Morrow Ave., North Chicago, Ill., LB $85,798 (2 bidders) imprv. ramps at intersection Edens Expressway and Clavey Rd., Lake Co.;

Ill.—**Berenz & Son Asphalt Co.**, 509 E. Bell St., Bloomington, Ill., LB $206,528 (1 bidder) b. conc. resurf., wid'n., SBI 39, Bloomington SW, McLean Co.;

Ill.—**McDougal-Hartman**, 1500 N. Adams St., Peoria, Ill., LB $883,887 (4 bidders) c. conc. paving from Banner N.E. on SBI Rte. 9, Peoria and Fulton Counties;

Ill.—**Jesse H. Freeman, Inc.**, 1608 Fifth Ave., Moline, Ill. LB $517,304. (5 bidders) widn. from Monticello to South of Bement, FAS 540, Piatt Co.;

Ill.—**Barber Paving Co.**, 4100 E. Logan St., Decatur, Ill. LB $259,968. (3 bidders) c. conc. resurf. from Monticello to Bement on FAS S 50, Piatt Co.;

Ill.—**Seneca Petroleum Co.**, 439 W. 33 St., Chicago, Ill. LB $90,215. (2 bidders) b. conc. resurf. between Highland Ave. in Creve Coeur to Ill. 98, Tazewell Co.;

Ill.—**Jansen & Schaefer**, 1500 Broadway, Pekin, Ill. LB $905,494. (1 bidder) c. conc. paving from Highland Ave. in Creve Coeur to Rt. 98, Tazewell Co.;

Ill.—**Swords & Dietz**, 107 S. Jefferson St., Peoria, Ill. LB $101,607. (6 bidders) bit. surf. tr. from Coldbrook south on FAA 407, Warren Co.;

Ill.—**Triangle Constr. Co.**, 480 N. Evergreen St., Kankakee, Ill. LB $690,351. (6 bidders) c. conc. paving U. S. 45 to Ill. 1 at county lines, White and Gallatin Counties;

Ill.—**E. A. Meyer Constr. Co.**, 1539 Moroon Ave., North Chicago, Ill., LB $368,308. (2 bidders) c. conc. paving FA 77 in Des Plaines River area, Will Co. Bids Sept. 28. CD 9/19.

H. Kaplan Co., 1527 W. Fullerton Ave., Chicago, Ill., CA $500,000. outdoor theatre, 79 and Harlem Sts., BRIDGEVIEW, ILL. Sam Levin, c/o J. Stagman, atty., 111 W. Monroe St., Chicago, Ill. CD 5/16.

W. J. Bentley & Bentley Constr. Co., 125 E. National Ave., Milwaukee, Wis. LB $782,900. (9 bidders) E. Lincoln Ave. Viaduct over C. & N.W. Ry. tracks at S. Bay St., MILWAUKEE, WIS. City, City Hall, Milwaukee, Wis. Bids Sept. 25. CD 9/5.

BUILDINGS—LB & CA

▲† **Kilroy Structural Steel Co.**, 8500 Union St., Cleveland, O. CA; structural steel for Nuclear Propulsion LABORATORY, SANDUSKY, O. Total est. $5,000,000. National Advisory Committee for Aeronautics, 1512 H St. N. W., Wash. D. C., CD 9/22/55; **Hammand Iron Works**, 10 Hammond St., Warren, Pa. CA, containment tank (Sandusky, O.).

George W. Lathrop & Sons, Inc., 1510 Montcalm St., Toledo, O., CA $769,577, HOSPITAL addns., TOLEDO, O. Flower Hospital, Cherry St., Toledo, O. Bids Sept. 1. CD 7/18.

▲ **Carlson Reid Builders, Inc.**, Cline Ave. and Chicago Rd., Gary, Ind., CA $1,137,805. HIGH SCHOOL and GYMNASIUM, 8 and Fleming Sts., HOBART, IND. Hobart School Bldg. Corp., 113 Cleveland St., Hobart, Ind. Bids Sept. 17. CD 9/27, under LB.

▲ **Joseph J. Duffy Co.**, 4994 N. Elston Ave., Chicago, Ill., LB $1,695,980. Wm. Howard Taft HIGH SCHOOL addn., 5625 N. Natoma Ave., CHICAGO, ILL. Bd. Educ., 228 N. LaSalle St., Chicago, Ill. Bids Sept. 21. CD 8/31.

▲ **Joseph J. Duffy Co.**, 4994 N. Elston Ave., Chicago, Ill., CA $1,002,000. GRADE SCHOOL, 1250 W. Erie St., CHICAGO, ILL. Bd. Educ., 228 N. LaSalle St., Chicago, Ill. CD 3/15/51.

▲ **Ellington Miller Co.**, 25 E. Jackson Blvd., Chicago, Ill., CA $1,000,000. 1 story, bsmnt., brick, railway TRANSFER HOUSE, CHICAGO, ILL. Santa Fe Railway, 80 E. Jackson Blvd., Chicago, Ill. C. O. Coverley, 80 E. Jackson Blvd., Chicago, Ill., archt.

Northern Builders, 4008 W. Addison St., Chicago, Ill., CA $350,000. 1 story, brick WAREHOUSE and OFFICE, 2814 S. Lock St., CHICAGO, ILL. Old Rose Distributing Co., 340 W. Ohio St., Chicago, Ill. Frank Musser, 1712 W. 107 St., Chicago, Ill., archt.

Poirot Constr. Co., 2001 W. Pershing Rd., Chicago, Ill., CA $500,000, EXHIBITION BUILDING addn., 4352 S. Halsted St., CHICAGO, ILL. Union Stock Yards & Transit Co., Exchange Bldg., Chicago, Ill. A. Epstein & Sons, 2011 W. Pershing Rd., Chicago, Ill., archts.

▲ **United States Steel Corp.**, 208 S. LaSalle St., Chicago 4, Ill., Own Forces, $7,000,000. structural MILL, South works, 3426 E. 89 St., CHICAGO, ILL. CD 3/19.

Selco Constr. Co., 2323 W. 47 St., Chicago, Ill., CA $475,000. 2 story, bsmnt., brick, HOTEL, 6227 S. Cicero Ave., CHICAGO, ILL. George Georbes, 5559 W. 63 St., Chicago, Ill. A. Epstein & Sons, 2011 W. Pershing Rd., Chicago, Ill., archts.

20th Century Home Builders, 410A Missouri Ave., East St. Louis, Ill., Owner Builds, $345,000. 31 RESIDENCES, Roselawn Addition on U. S. Highway No. 50, EAST ST. LOUIS, ILL.

Chell & Anderson, Inc., 5425 N. Kedzie Ave., Chicago, Ill., LB $386,474. GRADE SCHOOL, LAKE FOREST, ILL. School District 67, Lake Forest, Ill. Bids Sept. 22. Ralph Milman, 7 S. Dearborn St., Chicago, Ill., archt.

▲ **Enjay Constr. Co.**, 105 W. Madison St., Chicago, Ill., CA $3,000,000. 1 story, brick, concrete, steel TECHNICAL CENTER BLDG., Oakton St. between Lehigh and Caldwell Sts., MORTON GROVE, ILL. Cook Electric Co., 2700 N. Southport Ave., Chicago, Ill.

▲ **Kiefstad Eng. Co.**, 4444 W. Montrose Ave., Chicago, Ill., CA, $1,800,000. design and construct 1 story, FACTORY, OFFICES, paving, 8220 N. Austin Ave., MORTON GROVE, ILL. Radiant Mfg. Corp., 2627 W. Roosevelt Rd., Chicago, Ill.

▲ **The Austin Co.**, 510 N. Dearborn St., Chicago 10, Ill., CA Est. $6,000,000 design and construct FACTORY, PEORIA, ILL. LeTourneau-Westinghouse Co., Merle E. Yonta, pres., 2105 W. Adams St., Peoria, Ill. CD 9/12.

Peters Constr. Co., 2640 N. Humboldt Ave., Milwaukee, Wis., CA Est. $600,000. 2 story, bsmnt., 101x224 ft. OFFICE, MILWAUKEE, WIS. Employers Mutual of Wausau, Wausau, Wis. Bids Sept. 25. CD 9/10.

Jezo Constr. Co., 1909 S. 74 St., West Allis, Wis., CA $689,823, general contract 2 story, 252x266 ft., Fisher Elementary SCHOOL, WAUWATOSA, WIS. Bd. Educ., 1732 Wauwatosa Ave., Wauwatosa, Wis. Bids Sept. 20. CD 9/26, under LB.

▲ **Clawson Sales Center, Abe Cherrin, et al**, 18042 Ohio St., Detroit, Mich. Owner Builds. $2,000,000. SHOPPING CENTER, incl. 30 stores, 14 Mile Rd., CLAWSON, MICH. CD 5/9.

▲ **Louis H. Schostak, Schostak Brothers & Co.**, 3415 Cadillac Tower, Detroit, Mich. Owner Builds. $14,000,000. Livonia SHOPPING CENTER, incl. 52 stores, parking, 80 acres, Middlebelt and Plymouth Rd., LIVONIA, MICH.

▲ **James Coles & Lewis Easlick**, Milford, Mich. Owner Builds. $10,000,000. HOUSING 1,400 acre development between Milford and Commerce incl. artificial lakes to provide 41 mi. water front, MILFORD, MICH.

▲ **Northland Gardens**, 17445 W. Hampton Ave., Southfield, Mich. Owner Builds. $4,000,000. Northland Gardens Subdivision, 101 HOMES, SOUTHFIELD, MICH.

(Continued on page 118)

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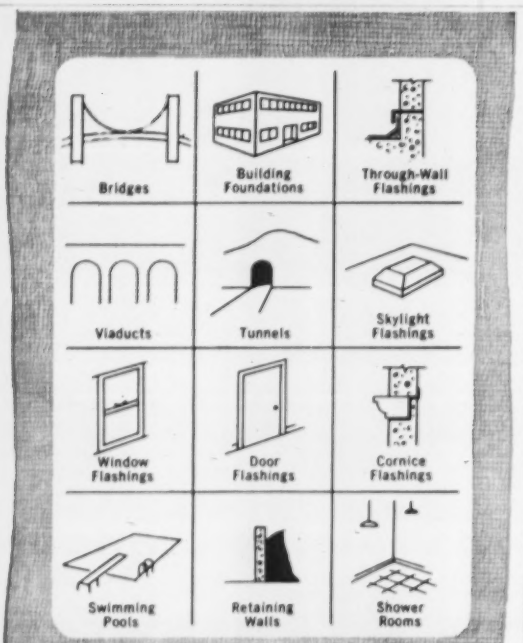

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(Continued from page 116)

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

† **Nebraska**—BA 10/19—Soil Conservation Service, 134 S. 12 St., Lincoln, 8-NB-57, detention dam, Brownell Creek Watershed, near Syracuse, Otoe Co. CD 10/22/53, under Neb., Syracuse.

† **Missouri-Arkansas** — BA 10/24 — U. S. Eng., 300 Broadway, Little Rock, Ark., substructure for Long Creek Bridge at State Hy. 86 relocation, east of Blue Eye, Table Rock Reservoir, White River Watershed, White River, CIVENG-03-050-57-9. CD 9/19.

† **Missouri—Arkansas**—BA 10/24—U. S. Eng., P.O. Box 867, Little Rock, Ark., relocation of State Hy. 86 east of Blue Eye at Long Creek, Table Rock Reservoir, White River Watershed, White River, CIVENG-03-050-57-10. CD 9/19.

† **Iowa**—BA 10/30—U. S. Eng., 1217 Post Office & Custom House, St. Paul 1, Minn., channel imprv., Upper Iowa River, near New Albin, CIVENG-21-018-57-25. Extended date. CD 9/17.

▲† **Missouri—Arkansas**—BA On Or About 12/12—U. S. Eng., P.O. Box 867, Little Rock, Ark., rein.-con. power house and appurtenances for 4-unit hydro-electric power plant with complete installation of two 68,000 hp. turbines, installation of embedded items for two future turbines; switchyard, switchyard tunnels and structures and installation of switchyard equip., two 50,000 kv-a. generators, incl. (a) maintenance of existing cofferdam (b) excav. and foundation preparation (c) fill and riprap (d) bit. surfaced access road and parking area (e) concrete masonry (f) structural steel and misc. metal (g) architectural features (h) heating, ventilating, air-conditioning system (i) plumbing drainage and misc. piping (j) misc. mechanical equip., (k) installation of equip. furnished by govt., Table Rock Dam, White River, Taney Co., 8 mi. southwest of Branson, Mo., 47 mi. north of Harrison, Ark., CIVENG-03-050-57-13. Plans deposit $250 full-size drawings), $150 (half-size drawings). CD 11/21.

BUILDINGS—BA

Tex., **Houston**—OFFICE—BA 10/18—At office, Engineer State Hy. Dpt., Austin, office bldg. for Houston Urban Expressways of the State Hy. Dpt., northwest of intersection of Hys. 90 and 290. Plans deposit $50. David C. Baer, 1200 Bissonnet St., archt.

Tex., **Lubbock**—SHOP, WAREHOUSE, etc.—BA 10/18—At office Engineer State Hy. Dpt., Austin, shop, warehouse and equipment shed for State Hy. Dpt., 501 64th St. Plans deposit $25. Atcheson, Atkinson & Cartwright, 1009 Texas Ave., archts. CD 7/19.

Tex., **Tyler**—OFFICE—BA 10/18—At office Engineer State Hy. Dpt., Austin, office bldg. for State Hy. Dpt., north side of W. Front St., (State Hy. 31). Plans deposit $25. Thomas, Jameson & Merrill, 820 N. Harwood St., Dallas, Zone 1, archts.

Tex., **Amarillo**—OFFICE—BA 10/19—Engineer State Hy. Dpt., Austin, expressway engineer's office bldg. at Highway Dpt. Dist. Headquarters site.

† Tex., **Galveston**—HOSPITAL ELEVATOR—BA 10/23—General Services Admin., P. Bldgs. Service, 1114 Commerce St., Dallas, Zone 2, elevator replacement, U. S. Public Health Service Hospital, Proj. No. CR71-9.

▲ Minn., **Golden Valley (P.O. Minneapolis)**—SCHOOL—BA 10/24—Bd. Educ., Independent School Dist. No. 69, Grade Seed, clk., high school on site East of Belt Line and North of Glenwood Ave. $1,100,000. Harmel & Green, 1921½ University Ave., St. Paul, archts. CD 5/7.

▲ Tex., **Dallas**—OFFICE BANK—BA 10/30—Preston State Bank, c/o R. E. Alexander, Jr., archt., 3704 Abrams Rd., 8 story office-bank, Preston Rd. $2,000,000. Plans deposit $50.

▲ Mo., **St. Louis County**—DISTRIBUTION CENTER—BA About 11/1—General Electric Appliance Div., General Electric Corp., 5021 Fyler Ave., St. Louis, Zone 9, 1 story, steel, concrete, masonry distribution center, incl. 110,000 sq. ft. warehouse section, 25,000 sq. ft. office, display area, rail siding, truck loading facilities west side Warson Rd. in Lindbergh-Warson Industrial Center. $1,000,000. Syl G. Schmidt & Assoc., 1819 Railway Exchange Bldg., 611 Olive St., St. Louis, Zone 1, archt.-engrs. CD 6/22.

HEAVY CONSTRUCTION—LB & CA

Perry Constr. Co., Bouton, Iowa, CA, $152,102. resurf. 524 mi. secondary roads, TIPTON, IOWA. Cedar Co., Court House, Tipton, Iowa. Bids Sept. 14.

† **Markham & Brown**, 1961 N. Industrial Blvd., Dallas, Tex., and **Patton-Tully Transportation Co.**, 1242 N. 2 St., Memphis, Tenn. LB $685,580, est. $595,770. constr., repair approx. 27,000 lin. ft. dikes and revetments Murrays Bend to Hermann Reach, Missouri River, near Chamois along Missouri River, ENG-57-22, MISSOURI. U. S. Eng., 1800 Federal Office Bldg., 911 Walnut St., Kansas City 6, Mo. Bids Sept. 27. CD 9/18.

▲† **Stupp Bros. Bridge & Iron Co.**, 3800 Weber Rd., St. Louis 23, Mo. CA $1,297,808, est. $1,166,568. constr. superstructure for new bridge over Long Creek below Table Rock Dam in relocation Mo. State Hy. 86 between Blue Eye and Branson, MISSOURI AND ARKANSAS. U. S. Eng., P.O. Box 867, Little Rock, Ark. CD 9/26, under LB.

▲ **ARKANSAS**—State Hy. Dpt., State Capitol, Little Rock,

Ark.—**Mississippi Valley Contrg. Co., Paragould, Ark.**, CA, $117,066, grading, 2 concrete bridges 0.5 mi. Little Rock-Pine Bluff Rd., remodeling concrete bridge on Pine Bluff-Stuttgart Rd., Hys. 65 and 79, Pulaski and Jefferson Counties; CA $164,811. grading, minor drainage structures, grav. base, bit. surf. 9.695 mi. Hillemann-Morton Rd., State Hy. 39, Section 7, Woodruff Co.;

Ark.—**Ben M. Hogan & Co.**, 1100 Fairvie St., Little Rock, Ark., CA $132,875, crushed stone shoulders, wid'n., resurf. Conway-Little Rock Rd., State Hy. 65, Section 10, Faulkner Co.; CA $314,794. b. conc. resurf. 33.288 mi. State Hy. 70, Section 10 and 20, St. Francis and Crittenden Counties;

Ark.—**M. E. Giloy**, Monette, Mo., CA, $503,107, crushed limestone base, 2 bridges length culverts, remodeling 3 rein.-con., structural steel I-beam bridge on Huntsville-Harrison Rd., State Hy. 68, Carroll Co.;

Ark.—**West Memphis Asphalt Co.**, West Memphis, Ark. CA $344,076. grav. or crushed stone shoulders, wid'n., resurf. State Hy. 70, Section 17, Monroe Co. Bids Sept. 26, awarded Sept. 26. Grand total $1,576,729. CD 9/19.

† **Yancy B. Turner**, 914 W. 13 St., Pine Bluff, Ark., CA $218,690. pile dike constr. on Arkansas River at Below Richland Bend, Arkansas and Round Lake, Jefferson and Lincoln Counties, ARKANSAS. U. S. Eng., P.O. Box 60, Vicksburg, Miss. Bids Aug. 23, awarded Aug. 24. CD 8/2.

† **Phillips & Davies, Inc.**, Kenton, O. CA $767,238. furnishing outlet works gate frames and guides, Oahe Reservoir Proj., near Pierre, Inv. 25-066-57-2, SOUTH DAKOTA. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Aug. 23. CD 9/14, under CA.

▲ **Olson Constr. Co.**, 410 S. 7 St., Lincoln, Neb., CA $1,075,382, general constr. and mechanical work Ashland Water Treatment Plant exten., LINCOLN, NEB. City, City Hall, Lincoln, Neb. Bids Sept. 19;

Casler Electric Co., 809 Pierce St., Sioux City, Iowa, CA $155,025, electrical work Ashland Water Treatment Plant (Lincoln, Neb.).

W. S. Bellows Constr. Corp., 716 N. Everton St., Houston, Tex., CA $65,500. site area earthwork, filling, grading, Meyerland Subdivision, Post Oak and Beechnut Sts., HOUSTON, TEX. The Meyerland Co., c/o T. A. Robinson, Jr., 510 Taft St., Houston, Tex. T. McCleary and Werlin & Kiefner, 3501 Buffalo Dr., Houston, Tex., archts. R. L. Reid, Inc., and James H. Howard & Assocs., 4101 San Jacinto St., Houston, Tex., engrs.

COLORADO—State Hy. Dpt., 4201 E. Arkansas St., Denver;

Monaghan & Smith, Derby, Colo. CA, $439,278, est. $412,000. c. conc. pavement, plant mix asph. surf. 7.33 mi. Colo. Proj. C 12-003-16, Denver and Adams Counties. Bids Sept. 27, awarded Sept. 28.

BUILDINGS—LB & CA

McKenzie-Hague-Gillis Co., Flour Exchange Bldg., Minneapolis, Minn. CA $600,000. general constr. two GRAIN MILLING BLDGS., receiving structure and a clearing house, HASTINGS, MINN. King Midas Flour Mills, Grain Exchange Bldg., Minneapolis, Minn. CD 3/15.

J. Leck Constr. Co., 211 S. Eleventh St., Minneapolis, Minn. CA Approx. $600,000. general constr. 3 story, 35x200 ft., HOME addn., MINNEAPOLIS, MINN. Walker Methodist Home, 3701 Bryant Ave. S., Minneapolis, Minn. McEnary & Krafft, McKnight Bldg., Minneapolis, Minn., archts.

Jacobson & Casey, Owatonna, Minn. CA $400,000. 60,000 sq. ft. FACTORY addn., OWATONNA, MINN. Owatonna Tool Co., Owatonna, Minn. CD 12/21.

P. L. Caron Constr. Co., 814 4 St. West, Des Moines, Iowa, CA $638,390, general contract HOME ECONOMICS BLDG. addn., Iowa State College, AMES, IOWA. State Bd. Regents, Des Moines, Iowa. Bids Aug. 28. CD 9/14, under LB.

▲ **Carl A. Nelson Co., Inc.**, 1815 Des Moines Ave., Burlington, Iowa. CA, Est. $1,500,000. general contract 1 story, face brick, concrete block 70,000 sq. ft. mfg. PLANT, BURLINGTON, IOWA. General Electric Co., Appliance Control Dpt., Wall St., Morrison, Ill. (Correction—contractor). CD 9/7, under CA.

Kruse Bros. Constr. Co., 3725 Roswell Ave., St. Louis 16, Mo. Owner Builds. $400,000. 41 RESIDENCES. Doran Terrace subdivision adjacent to 9860 Mackenzie Rd., AFFTON (ST. LOUIS 23 P.O.), MO.

C. Rallo Contg. Co., Inc., 5000 Kemper Ave., St. Louis 9, Mo. LB $436,322. general constr., 1 story, brick, steel, concrete, 47,000 sq. ft. HIGH SCHOOL, Tesson Ferry Rd. south of Gravois Rd., AFFTON (ST. LOUIS 23 P. O.), MO. Lutheran Assoc. for Higher Learning, Lutheran High School, 455 Lake Ave., St. Louis 12, Mo. Bids Sept. 20. CD 9/12.

Emmenegger Constr. Co., 9500 Gravois Rd., Affton 23, Mo. Owner Builds. $900,000. 63 ranch type RESIDENCES in Eddie Estate on East Warson Rd., CRESTWOOD (ST. LOUIS 23 P.O.), MO.

Joseph G. Schmersahl, c/o Schmersahl Realty & Bldg. Co., 8544 Airport Rd., Hazelwood 21, Mo. Owner Builds. $380,000. 38 RESIDENCES in Magdalen Place subdivision, off Graham Rd. 2 blocks north of Frost Ave., HAZELWOOD (ST. LOUIS 21 P. O.), MO.

Weeks Constr. Co., 1814 Harrison St., Kansas City, Mo. LB $382,444 (6 bidders) ELEMENTARY SCHOOL, 4100 N. Briarcliff Rd., NORTH KANSAS CITY, MO. City, Bd. Educ., 23 and Gentry Sts., North Kansas City, Mo. Bids Sept. 25. CD 3/21.

John O'Brien Contg. Co., 7055 Maryland Ave., Clayton 5, Mo. CA Est. $400,000, remodeling, rehabilitation, reconstr. CHURCH EDIFICE, constr. new RECTORY-PARISH BLDG. with cafeteria and parish hall in basement, ST. LOUIS, MO. St. John's Roman Catholic Parish, Rt. Rev. Msgr. Edward L. O'Toole, pastor, 16 and Chestnut Sts., St. Louis 3, Mo. Joseph Murphy of Murphy & Mackey, 4746 McPherson Ave., St. Louis 8, Mo., archt.

▲ **Van Dorn Constr. Co.**, 3108 N. 34 St., Kansas City, Kan. CA Est. $3,000,000. general contract SHOPPING CENTER called Barker Plaza, incl. department store, grocery chain super stores, on 17 acres on either side of 51 St. and north side of Leavenworth Rd., Welborn, KANSAS CITY, KAN. F. W. Barker, 5120 Leavenworth Rd., Kansas City, Kan. Chas. Mullin Jr., 1401 Fairfax Trafficway, Kansas City, Kan., archt.

▲ **Fisher Constr. Co.**, Box 6325, Houston, Tex. LB $1,166,511. general constr. SHOPPING CENTER main bldg., BEAUMONT, TEX. Gateway Shopping Center, c/o Irving R. Klein & Assocs. archts., 1317 Austin St., Houston, Tex. Bids Sept. 14. CD 9/19.

Nacogdoches Co., Court House, Nacogdoches, Tex. rejected bids Sept. 25, COURT HOUSE-JAIL, NACOGDOCHES, TEX. Est. $600,000. CD 8/28.

Frank W. Sharp, Builder, 6302 Bellaire Blvd., Houston, Tex. CA $365,500, 33 DWELLINGS; CA $377,500, 36 DWELLINGS, BELLAIRE, TEX. Frank W. Sharp, 6302 Bellaire Blvd., Houston, Tex. CD 8/31.

Edgebrook Co., c/o Lewis O. Tyra & Assocs., 5519 Lawndale St., Houston, Tex. Own Forces. $360,000, 18 DWELLINGS; $369,000, 30 DWELLINGS, HOUSTON, TEX. CD 8/22.

▲ **W. S. Bellows Constr. Corp.**, 716 N. Everton St., Houston, Tex., CA $9,000,000. SHOPPING CENTER, Meyerland Subdivision, Post Oak and Beechnut Sts., HOUSTON, TEX. The Meyerland Co., c/o T. A. Robinson, Jr., 510 Taft St., Houston, Tex. T. McCleary and Werlin & Kiefner, 3501 Buffalo Dr., Houston, archts. R. L. Reid, Inc., and James H. Howard & Assocs., 4101 San Jacinto St., Houston, Tex., engrs. CD 10/6/55.

Herman Weber, Inc., 800 N. Pearl St., Beaumont, Tex. CA $516,100, Southside SCHOOL, SILSBEE, TEX. Silsbee Independent School Dist., Silsbee, Tex. Bids Sept. 13. CD 9/27, under LB.

FAR WEST

BUILDINGS—BA

Calif., Santa Fe Springs—SCHOOL—BA 10/23—Little Lake School Dist., 10515 S. Pioneer Blvd., telegraph school 16 classrooms shops. $734,000. Plans deposit $25. Flewelling & Moody, 766 Colorado Blvd., Los Angeles, archts. CD 9/26.

† **Calif., Twentynine Palms**—CLUB—BA 10/24—Eleventh Naval Dist., 1220 Pacific Hy., San Diego, 1 story, 92x160 ft., concrete, steel, enlisted men's club and 1 story, 88x160 ft., N.C.O. Club, Spec. 4193-56. Plans deposit $85. CD 8/27.

BUILDINGS—SLC

▲ **Calif., Pescadero**—PLANT—Campbell Soup Co., 100 Market St., Camden, N. J., soon lets contract 1 story, concrete block mushroom plant. $1,000,000. CD 9/20.

HEAVY CONSTRUCTION—LB & CA

† U. S. Eng., City-County Airport, Walla Walla, Wash., cancelled bids to have been opened Oct. 25, 1 story, 12,300 sq. ft., frame PX addn. with utilities and paving, Mountain Home Air Force Base, ENG-45-164-57-6, MOUNTAIN HOME, IDAHO. CD 9/27.

† **Bureau Reclamation, Dpt. Interior**, Ephrata, Wash., cancelled bids to have been opened Sept. 27, deepening, extending W645-WN-E1 open drain West canal drains, Block 73, Columbia Basin Proj., Spec. 117c-390, WASHINGTON. CD 9/11.

▲ **WASHINGTON**—State Hy. Comn., Olympia,

Wash.—**C & E Constr. Co.**, Yakima, Wash., LB $191,625. bit. surf. b. conc. paving 1.483 mi. Primary State Hy. 7, FAP-F-031-1-(5), Grant Co.;

Wash.—**J. J. Welcome Constr. Co.**, Redmond, Wash., LB $96,693 (9 bidders) bit. surf. 1.831 mi. Primary State Hy. 10, F-029-2 (7), Okanagon Co.;

Wash.—**C. E. Oneal**, Ellensburg, Wash., LB $283,321. (9 bidders) bit. surf., rein.-con. slab bridge 6.028 mi. Primary State Hy. 10, FAP F-029-2-(12), Okanogon Co.;

Wash.—**Northwest Constr. Co.**, 3956 6 Ave. N. W., Seattle, Wash., LB $708,233 (5 bidders) clearing, draining, grading, 2 rein.-con. bridges 0.857 mi. Primary State Hy. 1, FAP-1-001-2 (36) Thurston Co. Bids Sept. 25. CD 9/12.

▲ **Guy F. Atkinson Co.**, 10 W. Orange Ave., South San Francisco, Calif., CA. drilling island, incl. rock breakwater with land-filled center, 9 mi. west of Ventura on Tideland lease, CALIFORNIA, Richfield Oil Corp., 579 S Ave., New York, N. Y. John A. Blume, 45 2 St., San Francisco, Calif., engr.

▲ **CALIFORNIA**—State Div. Hys., 1120 N. St. Sacramento,

Calif.—**Fredrickson & Watson Constr. Co.**, 873 81 Ave., Oakland, Calif., LB $873,081 (7 bidders) grading, surf. 2.2 mi. 5 structures on freeway, Santa Clara Co.;

Calif.—**Richards-Underdown Co.**, 355 Thorne Ave., Fresno, Calif., LB $166,568 (2 bidders) grading surf. 0.2 mi., widen rein.-con. bridge Fresno Co.;

Calif.—**Granite Constr. Co.**, P. O. Box 900, Watsonville, Calif., LB $392,851 (4 bidders) reconstr. 5 mi. storm damage Hy., on US-299 Trinity and Humboldt Counties. Bids Sept. 26. CD 8/31.

† **Harold's Constr. Co.**, 3738 Mt. Diablo Blvd., Lafayette, Calif., CA, $524,477. modification and alterations to 7 special AAA Sites, Contra Costa, San Francisco, San Mateo and Alameda Counties, CALIFORNIA. U. S. Eng., 180 New Montgomery St., San Francisco, Calif. Awarded Sept. 21. CD 9/5, under LB.

(Continued on page 120)

* In the State of Washington heavy rainfall maintains a very high water table yet the Stang wellpoint installation and supervision kept a 6½-foot x 9-foot nearly vertical walled trench completely dry.

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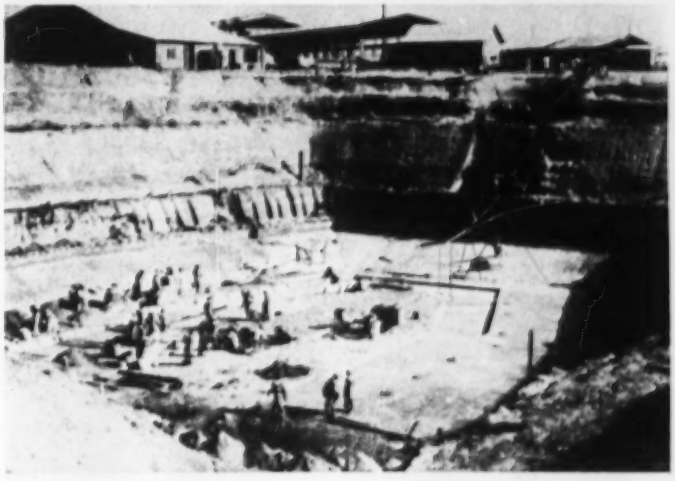

This 150-foot by 400-foot drydock in Karachi, Pakistan, being built for the Pakistan Industrial Development Corp. (Swissboring Overseas Corp., Ltd., Contractor) called for an excavation 40 feet deep with a 32-foot water table—only 50 feet from the water's edge! Dewatering of the job was quickly and efficiently accomplished by a specially engineered installation of Stang wellpoints, supervised by a Stang field engineer. Just one more example of Stang's outstanding water handling services to contractors the world over.

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(Continued from page 118)

BUILDINGS—LB & CA

▲ **C. H. Elle Constr. Co. & Vitt Constr. Co.**, P. O. Box 1190, Pocatello, Idaho, CA **$7,477,500** (7 bidders) construct and finance, HOUSING, Army Electronic Proving Ground, No. 04-353-57-4, FORT HUACHUCA, ARIZ. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids July 31. CD 8/3, under LB.

▲ **W. H. Schields Constr. Co.**, 252 Taylor St., Eugene, Ore., LB **$1,584,199** (5 bidders) North Eugene HIGH SCHOOL, EUGENE, Ore. Eugene School Dist., Eugene, Ore. Bids Sept. 24. CD 8/23.

Hilp & Rhodes, 918 Harrison St., San Francisco, Calif., **$A $950,000**. 2 story, 53,000 sq. ft. DEPARTMENT STORE, Concord Shopping Center, CONCORD, CALIF. J. C. **Penney Co., Inc., 100 Bush St.**, San Francisco, Calif. CD 12/21/55.

Davies, Kensder & Brown, 4915 Exposition Blvd., Los Angeles 6, Calif., CA, **$434,285**. 56-bed HOSPITAL, 9500 S. Broadway, West Los Angeles, LOS ANGELES, CALIF. Manchester Hospital, c/o Merrill W. Baird, archt., Bank of America Bldg., Glendale, Calif. Bids July 23. CD 7/13.

▲ **F. P. Lathrop Constr. Co.**, 806 Hearst Ave., Berkeley, Calif., CA **$1,500,000**. 1 story, rein.-conc., paper box mfg. PLANT, NEWARK, CALIF. American Forest Products Corp., 1 Montgomery St., San Francisco, Calif. CD 4/17.

▲ **M. J. Brock & Sons**, 2894 Rowena Ave., Los Angeles 39, Calif., CA **$1,830,000**. 93,679 sq. ft. mfg. PLANT, 23600 Superior St., NEWPORT BEACH, CALIF. Heliqut Co., 916 S. Meridian Ave., South Pasadena, Calif. Pereira & Luckman, 9220 Sunset Blvd., Los Angeles 46, Calif., archts.

▲ **Larsen & Larsen, Inc.**, 2455 Mason St., San Francisco, Calif., CA, **$1,000,000**. coil strip processing PLANT, OAKLAND, CALIF. American Can Co., 100 Park Ave., New York, N. Y. CD 6/22.

▲ **Tom E. Norcross**, 6053 Atlantic Blvd., Long Beach, Calif., LB **$1,327,300**, est. $1,266,463 (4 bidders) 63,000 sq. ft. Aviation HIGH SCHOOL, REDONDO BEACH, CALIF. South Bay Union High School Dist., 207 N. Francisca St., Redondo Beach, Calif. Bids Sept. 25. CD 9/14.

CANADA

BUILDINGS—BA

Ont., **Toronto**—SCHOOL—BA 10/16—Bd. Educ., 155 College St., public school, Rebent Park, $680,000. CD 12/15/43.

▲ **Ont., Windsor**—CITY HALL—BA 10/26—City, City Hall, 4 story, bsmnt., 62x183 ft., plus 28x48 ft. wing, rein.-con., steel, brick city hall, Civic Square, $1,750,000. Sheppard & Masson, 52 Chatham St. W., archts. CD 1/5.

N. S., **Truro**—FEDERAL—BA 11/7—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., federal bldg. $875,000. Bids 7/4 rejected. CD 7/12, under LB.

HEAVY CONSTRUCTION—LB & CA

▲ **Poole Constr. Co. Ltd.**, 10503 109 St., Edmonton, Alta., CA Est. About **$4,000,000**. 300 HOUSING UNITS, incl. ground services and electrical distribution sys., R.C.A.F., COLD LAKE, ALTA. Central Mortgage & Housing Corp., 870 Portage Ave., Winnipeg, Man. Bids Aug. 8, awarded Sept. 21. CD 7/30.

▲ **Modern Constr. Ltd.**, Salisbury Rd., Moncton, N. B., CA Est. **$3,000,000**. sub-grade of new railway line for lead-zinc-copper mines at Little Tomogonops, Bartibog, NEW BRUNSWICK, Canadian National Rys., Atlantic Region, D. W. Blair, regional engr., Moncton, N. B. Bids Sept. 7, awarded Sept. 20.

Atlas Constr. Co. Ltd., 4781 St. Catherine St. W., Montreal, Que., LB **$607,583** (sole bidder) bulk petroleum storage (above ground) Royal Canadian Air Force Station, CHATHAM, N. B. Defence Constr. (1951) Ltd., 56 Lyon St., Ottawa, Ont.

ONTARIO—Dpt. Hys., Parliament Bldgs., Toronto,

F. Pidgeon & Sons, 94 Sheldon Ave., Chatham, Ont., CA, **$660,166**. gran. base, hot mix paving Hy. 7 from 1 mi. west of Forest Rd. to one mile west of road between Lots 6 and 7, Plympton Twp., Chatham. Bids Sept. 19, awarded Sept. 24. CD 9/26, under LB.

Johnson Bros. Co. Ltd., 37 Market St., Brantford, Ont., CA, **$412,948**. water mains, storm sewers, sanitary sewers, sanitary sewer force main and roads, at Army Camp, PETAWAWA, ONT. Central Mortgage & Housing Corp., 40 Eglinton Ave. E., Toronto, Ont. Awarded Sept. 19.

▲ **Edouard Monette Ltd.**, 2190 Gouin Blvd. E., Montreal, Que., CA, **$1,098,617**. Angrignon Park and Zoo, West end of Cote St. Paul Rd., MONTREAL, QUE. City, City Hall, Montreal, Que. Bids Aug. 22, awarded Sept. 24. CD 9/5, under LB.

▲ **Williams & Williams (Eastern) Ltd.**, 1437 MacKay St., Montreal, Que., CA, **$1,692,058**, supplying, erecting curtain wall and fixed glass assemblies for air terminal bldg., Montreal Airport, Dorval, MONTREAL, QUE. Dpt. Transport, Hunter Bldg., Ottawa, Ont. Awarded Sept. 24. CD 8/28, under LB.

BUILDINGS—LB & CA

▲ **Canadian Bechtel Ltd.**, 25 King St. W., Toronto, Ont., CA, **$25,000,000**. petrochemical PLANT, SARNIA, ONT. Imperial Oil Ltd., 56 Church St., Toronto, Ont. CD 7/11.

National Boring & Sounding, Inc., 606 Cathcart St., Montreal, Que. Owner Builds. **$400,000**. OFFICE BLDG., Rosemount, MONTREAL, QUE. Crevier, Lemieux & Mercier, 1065 Pratt Ave., Montreal, Que., archts.

Community Enterprises Ltd., 5665 Pare St., Montreal, Que., CA, **$700,000**. revised 2 story, 70,000 sq. ft. structural steel frame, WAREHOUSE, MONTREAL, QUE. Timmins Aviation Ltd., Montreal Airport, Dorval, Que. Awarded Sept. 20. Philip F. Goodfellow, 1117 St. Catherine St. W., Montreal, Que., archt. S. L. Sachs, 5600 Cote St., Antoniore Rd., Montreal, Que., engr. CD 7/12.

Albert Lamontagne, 233 St. Barthelemy St. N., Joliette, Que., CA, **$600,000**. 3 wings, each 2 story, bsmnt., 48x120 ft. T-shaped, concrete, steel, brick, stone Old People's HOME, ST. LIN, QUE. Hospice St. Antonie de Padoue, Principal St., St. Lin, Que. Auguste Martineau, 556 Manseau St., Joliette, Que., archt. Awarded Sept. 21.

ALASKA

HEAVY CONSTRUCTION—BA

† **Alaska, Ketchikan**—BA 10/22—Alaska Dpt. Fisheries, Dpt. Interior, Juneau, Bakewell fishery proj. Plans deposit $25.

LATIN AMERICA

BUILDINGS—BA

▲ **Argentina, Rosario**—BANK—Bids Asked—National Mortgage Bank, Buenos Aires, 12 story bank, Rioja and Corrientes Sts. $1,940,000.

HEAVY CONSTRUCTION—LB & CA

GUATEMALA—Departmento de Bienes Nacionales, Licitaciones y Asuntos Alemanes, 14 Calle, No. 3-60, Guatemala City.

KRUPP, Essen, Germany, CA **$769,065**, furnish, erect superstructure on the Las Vacas bridge on the Atlantic Hy. Bids Apr. 10. CD 3/26.

▲ **Venezolana de Trabajos Publicos C. A.**, Centro Profesional del Este, Piso 12, Caracas, D. F., Venezuela, CA Est. **$2,100,000**. dredging 3,000,000 cu. yd. Apure River at San Fernando, VENEZUELA. Ministry of P. Wks., Caracas, Venezuela. CD 1/2/47.

FOREIGN

HEAVY CONSTRUCTION—LB & CA

▲ **Morrison-Knudsen Co., Inc.**, 74 New Montgomery St., San Francisco, Calif., U. S. A., LB Total Est. **$25,000,000-$50,000,000**. Riyadh-Meina-Jeddah R.R., SAUDI ARABIA. Ministry of Finance & National Economy, Jeddah, Saudi Arabia. Bids Aug. 12. CD 8/28, under CA.

PROPOSED PROJECTS

WATER SUPPLY

▲ **Calif., Colton**—City, City Hall, voted **$1,250,000** bonds Sept. 18, water sys. addn. incl. drilling wells, CD 8/10.

Calif., Santa Clara—City, City Hall, bond election Nov. 6 for water sys. imprvs. **$500,000**.

Tenn., Tullahoma—City, City Hall, water pumping station and filtration plant. **$550,000**. Greeley & Hansen,, consult. engrs., 220 S. State St., Chicago, Ill., will make preliminary estimate. CD 5/11/53.

▲ **Tex., Angleton**—City, 40,000 acre ft. water retaining reservoir, Brazos River. **$1,500,000**.

▲ **Tex., Brady**—City, 25,000 acre ft. water reservoir on Brady Creek. **$1,000,000**. Joe J. Rady, 511 Insurance Bldg., Fort Worth, consult. engr. CD 6/29/50.

Tex., Edinburg—City, water plant, **$400,000**; water distr. sys. **$232,000**. Charles L. Melden & Joe Winston, c/o owner, consult. engrs. CD 8/20/55.

▲ **Tex., Longview**—City, City Hall, dam and reservoir, **$3,500,000**; elevated steel water storage, **$150,000**; water distr. lines, **$150,000**; water pumping unit, **$200,000**; water main, Lake Cherokee Reservoir site to city limits, **$750,000**. Julian Montgomery, 602 W. 11 St., Austin, consult. engr. CD 9/11.

SEWERS, WASTE DISPOSAL

▲ **Calif., Laguna Beach**—City Council, City Hall, 505 Forest Ave., addnl. sewage disposal facilities, pumping plant, converting existing sludge type treatment plant to primary sedimentation type. **$1,000,000**. James M. Montgomery, 15 "I" Oakland Ave., Pasadena, consult. engr.

Calif., Merced—City, City Hall, bond election Dec. 18, sewers and storm drains at North Merced Trunk, **$975,000**. Paul L. Adamson, 24225 Summerhill Ave., Los Altos, consult. engr. CD 5/16.

▲ **Calif., Merced**—City, City Hall, sewerage expansion. **$4,054,708**. Paul L. Adamson, 543 Byron St., Palo Alto, consult. engr. CD 7/6/56.

Calif., Ontario—Ontario & Upland City Councils, City Hall, plans by Associated Engineers, 425 N. Laurel St., constr. Ely St. and Benson Ave. outfall sewer lines, incl. Euclid Ave. line between Ely and Francis Sts., **$400,000**. CD 5/20/55.

Calif., Oroville—City, City Hall, sewage treatment plant, sanitary trunk lines, **$909,500**. To go ahead 1957.

▲ **Calif., Vernon**—City, City Hall, voted bonds Sept. 11, sewerage sys. and connections to Los Angeles disposal network. **$3,320,000**.

▲ **Fla., Miami**—City, 3332 Pan American Dr., Zone 33, voted **$2,750,000** bonds, Sept. 25, storm sewers in various locations; voted **$10,000,000** bonds Sept. 25, sanitary sewers incl. expanding interceptor lines, pumping station or treatment plant. CD 7/17.

▲ **Fla., Miami**—City, 3332 Pan American Dr., Zone 33, voted **$1,100,000** bonds Sept. 25, incinerator at Coconut Grove. CD 7/17.

Idaho, Lewiston—Lewiston Orchards Sewer Dist., Lewiston, 30 mi. general sewers **$550,000**; treatment plant, **$150,000**. Work next year. W. L. Woodward, Empire State Bldg., Spokane, Wash., consult. engr.

▲ **Kan., Emporia**—City, City Hall, sewer extensions and sewage plant imprvs. **$1,270,400**. Black & Veatch, 4706 Broadway, Kansas City, Mo., consult. engrs.

▲ **Ky., Newport**—City, City Bldg., sanitary sewers for Riddleview subdivision. **$200,000**, Geo. Neack, David Court, Newport, consult. engr.; repair, install new sewer lines throughout city, **$900,000**, A. J. Joseph, city mgr.

Mo., St. Louis County—Metropolitan St. Louis Sewer Dist., William Q. Kehr, exec. dir., 506 Olive St., **$675,000** bond election Oct. 16, sys. of trunk and sub trunk sewers in Sub. Dist. 1 of River Des Peres Watershed (Creve Cour and Frontenac area) 10 square miles Clayton and Olive St. roads, Lindbergh Blvd. and metropolitan dist. limits on west 3 mi. west of Lindbergh Blvd. CD 11/17/54.

▲ **N. J., Paramus**—Paramus Boro., Boro Hall, sanitary sewer disposal system, pumping stations, etc. **$7,892,000**. Bowe, Alberston & Assocs., 75 West St., New York 6, N. Y., consult. engrs.

▲ **N. Y., Buffalo**—Buffalo Sewer Auth., City Hall, 3 storm sewers for area between Humboldt Parkway and Jefferson Ave. **$1,000,000**. CD 2/9.

▲ **N. Y., Buffalo**—Buffalo Sewer Auth., City Hall, storm relief sewers, **$1,400,000**, Nussbaumer, Clarke & Velzy, Inc., 327 Franklin St., consult. engrs. CD 9/26.

O., Blue Ash—Village, Kenwood Rd., sanitary sewerage sys. **$400,000**. Ayers & Graf, 527 Linton St., Cincinnati, consult. engrs.

▲ **Utah, Salt Lake City**—Cottonwood Sewer Dist., City-County Bldg., voted bonds Aug. 29, sewers in area lying between 5600 and 9500 south, between 9th East and Wasatch Blvd. **$1,600,000**. Neff Engineers, 2500 Evergreen Ave., consult. engrs. CD 8/3.

BRIDGES

Calif., Willows—Glenn Co., c/o Road Comr., Court House, bridge across Stoney Creek and 9 mi. road near proposed Black Butte Dam. **$569,000**.

STREETS AND ROADS

▲ **ALABAMA**—State Hy. Dpt., Montgomery,

Tuscaloosa Co.—4-mile 4-lane highway on 15 St., Tuscaloosa, connecting with Highway No. 11. **$1,000,000**.

▲ **Fla., Miami**—City, 3332 Pan American Dr., Zone 33, voted **$5,000,000** bonds Sept. 25, residential streets imprvs. CD 7/17.

▲ **MICHIGAN**—State Hy. Dpt., Stevens T. Mason Bldg., Lansing,

Allegan and Kent Counties—22 mi. on US 131 from Plainwell north to Allegan-Kent county lines, **$14,000,000**.

Berrien and Kalamazoo Counties—53 mi. on US 12 from Kalamazoo to Stevensville, part of Detroit-Chicago Hy., **$40,800,000**.

Clinton, Ionia and Kent Counties—Detroit-Lansing-Grand Rapids-Muskegon Hy., stretch of hy. on US 16 from M-100, 39 mi., **$26,000,000**.

Emmet Co.—28 mi. hy. on US 23 from Indian River north to Mackinaw City, **$14,000,000**.

Jackson Co.—15 mi. US 127 from Jackson north to Leslie, **$7,000,000**.

Jackson and Calhoun Counties—41 mi. US 12 from Parma to Galesburg, part of Detroit-Chicago Hy., **$28,000,000**.

Saginaw and Bay Counties—21 mi. on US 23 from Bridgeport to Kawkawlin, **$17,500,000**. Carlos A. Weber, ch. engr.

▲ **N. J., Somerville**—Bd. Freeholders Somerset Co., Court House, Somerville, county road reconstr. **$1,200,000**. Albert C. Jones & Assocs., 223 High St., Mt. Holly, consult. engrs.

Tex., LaMarque—City, City Hall, street paving, imprvs. $500,000.

▲ **QUEBEC**—Provincial Roads Dpt. & Provincial P. Wks. Dpt., Parliament Bldgs., Quebec City,

highway diversion and bridge, Highway No. 2, Quebec-Montreal, diversion of present highway to north of Three Rivers and Cap de Madeleine and constr. bridge. $2,000,000. Ernest Gohier, ch. engr. Provincial Rds. Dpt. Olivier Desjardins, ch. bridge engr.

EARTHWORK, WATERWAYS

† **Alabama**—U. S. Eng., 2301 Grant St., Mobile, Zone 7, excavation for Jackson Lock and Dam, Tombigee River. **$750,000**.

▲† **Georgia**—U. S. Eng., 2301 Grant St., Mobile 7, Ala. Buford Dam, **$4,553,000** appropriated. CD 8/25/54.

▲ **N. J., North Bergen**—Twp. of North Bergen, 4233 Hudson Blvd., control bldg., River Rd., 2 sedimentation tanks, sludge line to existing disposal plant, automatic pumping station and sedimentation bank, 2 control chambers and two sewer lines to eliminate dumping in Hudson River, sewer line and culverts, from Jersey City line to Neck Sect. pumping stations, to eliminate dumping in Hackensack River, **$3,800,000**. Joshua Muss & Sons, 4219 Hudson Blvd., consult. engrs. CD 4/15/46.

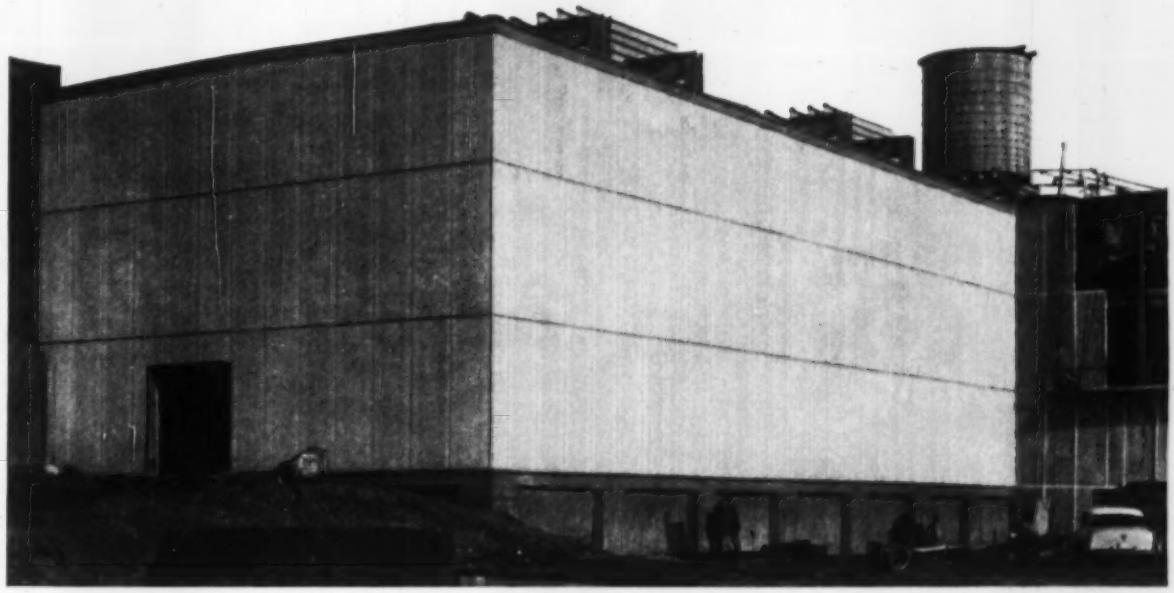
† **North Carolina**—U. S. Eng., 308 Custom House, Wilmington, 18x48 ft. pumping plant, three 48 in.

(Continued on page 123)

Johns-Manville TRANSITOP® Structural Panels

MEET THE TREND TO

MODERN PANELIZED CONSTRUCTION



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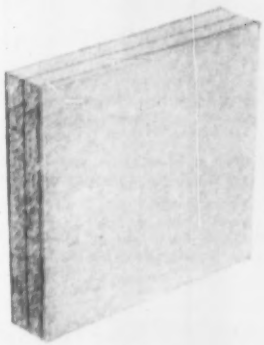
THE MOST striking change in building construction methods in recent years has been the trend toward prefabricated building panels.

This is particularly true in the construction of panelized curtain walls for buildings, large and small. Although curtain wall construction in skyscrapers has been widely publicized, this method of construction is just as applicable to smaller buildings such as schools, hospitals, office buildings, motels and shopping centers. Today, paneled curtain walls probably exceed all other applications in popularity and are rapidly becoming the standard method of building construction.

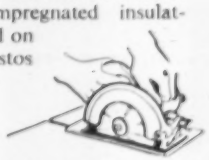
Johns-Manville Transitop offers architects, designers and builders a simple and economical method of providing panelized curtain walls. Transitop is durable, weather resistant, requires minimum maintenance. As a curtain wall, Transitop provides high structural strength, reduces the dead load, increases usable floor space, provides adequate insulation and is easy to erect. Panels are easily applied over wood or steel framing.

The same advantages that make Transitop so suitable for panelized curtain wall construction also make it equally ideal for roof deck construction.

J-M Transitop is a complete 4′ wide by 8′, 9′, 10′, or 12′ long unit, in $1\frac{5}{16}$″, $1\frac{5}{8}$″, $1\frac{15}{16}$″, or 2″ thicknesses. It consists of an integral impregnated insulating board core faced on two sides with Asbestos Flexboard® sheets.



- Facings of tough, weatherproof asbestos-cement Flexboard
- Core of integrally impregnated insulating board
- Waterproof adhesive bonds core to Flexboard sheets



- Transitop is cut to fit and installed with ordinary construction tools

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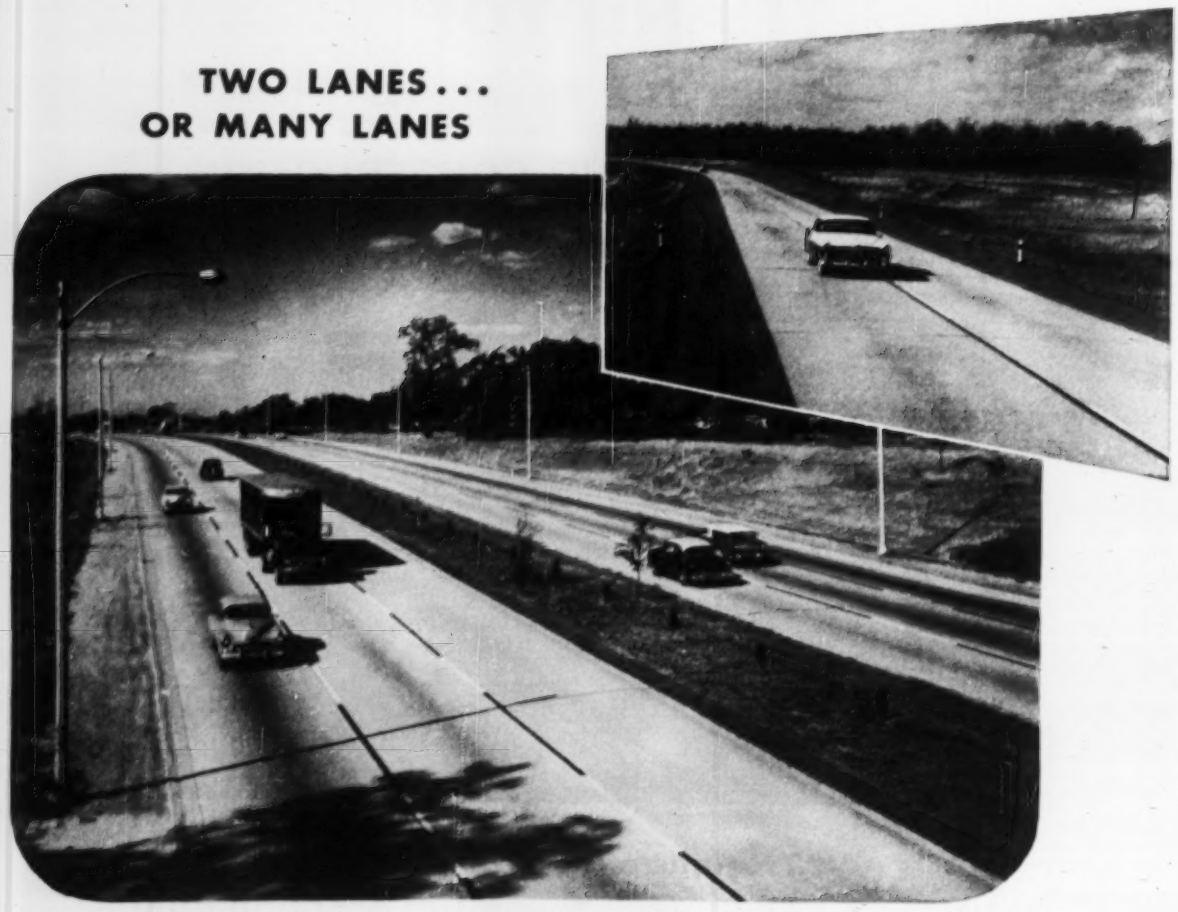

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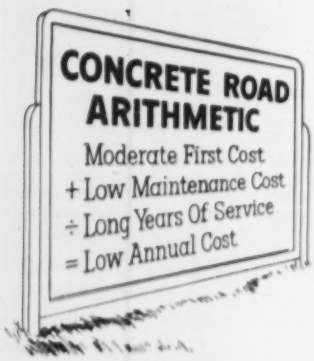

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(Continued from page 120)

horizontal pumps; 55 hp. diesel motors and accessories, 9 flapgates in concrete dams and canal work, consisting of 44,000 cu. yd. excav., 40 acres clearing, grubbing, etc. Atlantic Intracoastal Waterway, Fairfield Drainage. $100,000-$1,000,000. Bids January 1957. CD 8/25/54.

▲† **Ohio and West Virginia**—U. S. Eng., 925 New Federal Bldg., Pittsburgh 19, Pa. New Cumberland Locks and Dam, concrete dam 1,310 ft. long across Ohio River, incl. eleven 21x100 ft. tainter crest gates anchored between concrete piers, operating machinery and 1,600 ft. railroad relocation. $8,000,000 appropriated. Bids February 1957.

† **South Carolina**—U. S. Eng., Custom House, Charleston, 3 contraction dikes from 1,300 to 2,400 ft. long, incl. installing approx. 1,300 tons govt. furnished steel piling, 18,000 cu. yd. slag, 10,000 cu. yd. riprap, Charleston Harbor (Cooper River). $100,000-$1,000,000. Bids about Oct." 1. CD 4/25/55.

▲† **Washington**—U. S. Eng., City-County Airport, Walla Walla, Ice Harbor Lock & Dam. $8,000,000 appropriated.

AIRPORTS

▲ **Ill., Chicago**—AIRPORT—City Bureau of Aviation, City Hall, new construction at Midway Airport and Meigs Field, $4,611,000. Work in 1957. CD 6/11/45.

▲† **La., New Iberia**—AIRPORT IMPRVS.—Dist. Pub. Wks. Office, Eighth Naval Dist., Bldg. 16, U. S. Naval Station, New Orleans,
runway, taxiways, parking areas, NBy 6394, Spec. 6394/56, $7,000,000;
water, sewer, gas systems, NBy 6395, Spec. 6395/56, $500,000-$1,000,000;
electrical distribution sys. NBy 6396 Spec. 6396/56, $250,000-$500,000;
roads and walks, NBy 6397, Spec. 6397/56, $500,000-$1,000,000;
railroad spur, NBy 6398, Spec. 6398/56, $100,000-$250,000;
supply facility, NBy 6399, Spec. 6399/56, $500,000-$1,000,000;
public works facility, NBy 6400, Spec. 6400/56, $250,000-$500,000;
ordnance facility, NBy 6401, Spec. 6401/56, $100,000-$250,000;
fuel storage, NBy 6402, Spec. 6402/56, $250,000-$500,000;
recreation bldg., infirmary, NBy 6403, Spec 6403/56, $1,000,000-$1,500,000;
BOQ, COQ, EM subsistence and cold storage, NBy 6404, Spec. 6404/56, $1,000,000-$1,500,000;
EM barracks, NBy 6405, Spec. 6405/56, $1,000,000-$1,500,000;
operations bldg., control tower and crash station, NBy 6406, Spec. 6406/56, $500,000-$1,000,000;
administration bldg., NBy 6407, Spec. 6407/56, $250,000-$500,000;
ground school and link trainer bldg., NBy 6408, Spec. 6408/56, $250,000-$500,000;
communications facilities, NBy 6409, Spec. 6409/56, $250,000-$500,000;
aircraft maintenance hangar, NBy 6410, Spec. 6410/56, $1,000,000-$1,500,000, all at Naval Auxiliary Air Force Station. Bids about Dec. 1.

▲† **Ore., Klamath Falls**—RADAR INSTALLATION—P. Wks. Officer, 13th Naval Dist., U. S. Naval Station, Seattle, Wash., U. S. Air Force radar installation near Hamaker Butte. $1,500,000. Bids this fall.

PUBLIC BUILDINGS

Calif., Covina—Charter Oaks School Dist., 4949 N. Bonnie Cove, Charter Oaks and P. O. Box 9, Covina, plans by Daniel, Mann, Johnson & Mendenhall, 3325 Wilshire Blvd., Los Angeles, frame stucco school. $500,000. CD 11/1.

Calif., Livermore—SCHOOL—Livermore Joint Union High School Dist., plans by Anderson & Simonds, 2800 Park Blvd., Oakland, frame, stucco high school addn. $550,000. CD 4/12.

▲ **Calif., Los Angeles**—EMPLOYMENT CENTER—Bd. Educ., 1425 S. San Pedro St., plans by Calwell, Mason & Muntz, 4575 Pacific Blvd., Vernon, Temple St. Employment Center addns., constr. instruction aid and service center facilities. $1,250,000. CD 4/8/55.

▲ **Calif., Los Angeles**—CORONERS—Bd. Supervs. Los Angeles Co. 501 Hall of Records, plans by Robert Kliegman, 8588 Melrose Ave., 35,000-40,000 sq. ft. coroner's bldg., Los Angeles General Hospital $1,117,875.

▲ **Calif., Martinez**—HOSPITAL—Veterans Admin. Munitions Bldg., Wash., D. C., hospital $14,000,000. CD 3/13, under Calif., Oakland.

▲ **Calif., Oxnard**—HOUSING—Oxnard Housing Auth., 1220 W. Tenth St., plans by Kenneth H. Hess, 620 Main St., Ventura, 100 housing units, $1,227,140. Neil J. Cummins, 1280 Saviers Rd., engr.

▲ **Calif., Pomona**—SCHOOL—Pomona Unified School Dist., 605 N. Park Ave., plans by Marston & Weston, 25 S. Euclid Ave., Westside High School, $2,400,000. CD 3/19.

Calif., Riverside—COLLEGE—Riverside College Dist., plans by Herman O. Ruhnau, Mission Inn Rotunda, addn. to Riverside College Administration Bldg., cosmetology bldg. $500,000. CD 6/26.

Calif., Santa Ana—LIBRARY—Santa Ana City Council, City Hall, $700,000 bond election Nov. 6, new public library. CD 10/29/54.

▲ **Calif., Stockton**—COURT HOUSE—San Joaquin Co., Court House, bond election Nov. 6, 5 story, 295,000 sq. ft., rein.-con. court house. $6,400,000. Mayo, Johnson & DeWolfe, Exchange Bldg., archts. CD 3/14.

Calif., Tracy—HOUSING—Housing Authority of the County of San Joaquin, 2436 South Belleview St., Stockton, plans by Ellis E. Eckland & Howard G. Bissell, 41 North Hunter St., Stockton, 60 housing units. $600,000.

▲ **Colo., Greeley**—SCHOOLS—School Dist. No. 6, 811 16 St., bond election Oct. 23, school expansion, $1,328,000.

▲ **Colo., Paonia**—SCHOOL—School Dist. No. 50, Paonia, high school. $1,170,000.

Conn., Bethel—SCHOOL—Town, Town Hall, high school. $585,000.

▲ **Conn., Storrs**—FINE ARTS—State P. Wks. Dpt., 165 Capitol Ave., Hartford, plans by Golden, Storrs & Co., 343 Fairfield Ave., Hartford, Fine Arts, Social Science and Humanities Bldg., University of Connecticut. $3,632,817. Fred S. Dubin & Assocs., 178 S. Whitney St., Hartford, consult. engrs. CD 5/31.

Conn., West Hartford—SCHOOL—Town, Town Hall, plans by Robert C. May, 10 Simsbury Rd., West End High School, south of Wampanoag Country Club. $500,000. Chas. A. Currier & Assocs., 967 Farmington Ave., consult. engrs. CD 8/16.

▲ **Conn., Windsor**—SCHOOL—Town, Town Hall, West Lots Junior High School. $1,250,000.

Del., Newark—SCHOOL—Newark Del. Special School Dist., plans by E. William Martin, 830 West St., Wilmington, Junior High School, $750,000. CD 12/13.

▲ **Fla., Miami**—CITY HALL—City, 3132 Pan American Dr., Zone 33, defeated $3,500,000 bonds Sept 25, city hall. CD 7/17.

▲ **Ga., Columbus**—HOUSING—Columbus Housing Auth., 1000 Wynnton Rd., plans by Pound & Flowers, 419 Twelfth St., GA-4-10 102 housing units, $1,284,000; plans by Huel L. Crockett, 2 W. 13 St., GA 4-9, 140 housing units, $1,596,492. CD 3/28/52.

Ind., Bloomington—GEOLOGY—Bd. Trustees Indiana University, geology bldg., on campus, $1,500,000.

▲ **Ind., Indianapolis**—APARTMENT—Indiana University, 1100 W. Michigan St., apartment for married students at Medical Center. $1,210,000. CD 10/4/55.

Ind., South Bend—SCHOOL—School City of South Bend, 228 S. St. Joseph St., plans by Andrew Toth, 2158 Portage Ave., Thos. A. Edison school addn., east side of here, $600,000.

Iowa, Sully—SCHOOL—Lynnville-Sully Community School Dist., Sully, voted $425,000 bonds, high school. CD 9/7.

Kan., Olathe—SCHOOL—City, voted $400,000 bonds Sept. 25, high school on North side Prairie at Buchanan St. Edw. M. Fuller, 701 E. 14 Ave., North Kansas City, Mo., archt. CD 9/12.

Ky., Fort Campbell—QUARTERS—U. S. Eng., 306 Federal Bldg., Nashville, Tenn., NCO family quarters, $500,000-1,000,000.

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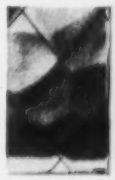
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▲ **Mass., Tewksbury**—SCHOOL—Town School Dpt. plans by Donaldson Ray McMullin, 698 Mass. Ave., Cambridge, high school, $1,700,000. CD 4/4/55.

Mich., Adrian—DORMITORY—State of Michigan, A. N. Langlus, dir. State Bldg. Dpt., Lewis Cass Bldg., Lansing, plans by Louis C. Kingscott & Assoc., 511 Monroe St., Kalamazoo, dormitory, Adrian State Home and Training School for Girls, $470,000.

Mich., Grand Rapids—SCHOOL—Kelloggsville Public School Dist., bond election Oct. 23, West Elementary School addn., science dpt., gymnasium and classrooms, $700,000.

Mich., Monroe—SCHOOL—Whiteford Agricultural School Dist., Monroe, Junior Senior High School, $725,000.

Mich., Ottawa Lake—SCHOOL—Whiteford Rural Agricultural High School, John Schindler, supt., voted $725,000 bonds Sept. 15, school, Francis Faulhaber, Adrian, archt.

Minn., Grand Rapids—SCHOOL—Bd. Educ. School Dist. No. 1, Itasca County, J. A. Anderson, clk., plans by A. R. Melander, 603 Alworth Bldg., Duluth, elementary school, $400,000. CD 9/24.

▲ **Minn., Grand Rapids**—SCHOOLS—Bd. Educ. J. A. Anderson, clk., voted $1,100,000 bonds Sept. 11 for school and equipment, new elementary school constr. $400,000. CD 9/6.

Minn., Rochester—COURTHOUSE—Olmsted Co., Frances L. Underleak, aud. voted $990,000 bonds Sept. 11, new courthouse. CD 8/23.

▲ **Minn., St. Paul**—WORKHOUSE—City of St. Paul and Ramsey Co. Detention & Workhouse Facility Comm., F. Marzitelli, chn., B. M. Troje, exec. secy., 945 Court House, plans by R. R. Gauger & Co., 421-2 First Federal Bldg., 2 story men's section of workhouse, 1 story attached women's section, $1,300,000. CD 3/29.

Mont., Polson—HOSPITAL—State Bd. Health, Helena, 35 bed hospital $450,000.

▲ **N. J., Fairlawn**—SCHOOLS—Bd. Educ., Borough of Fairlawn, Fairlawn plans by Arthur E. Rigolo, Rt. 46 and Grove St., Clifton, Radburn School addn. $400,000; Warren School addn. $350,000; Westmoreland School addn. $600,000.

N. J., Flemington—OFFICE—Bd. Freeholders, Huntendon Co. plans by Winthrop Jones, Rt. 202, Basking Ridge, new office unit to existing county office bldg. and remodeling structure. $375,000.

▲ **N. J., New Brunswick**—COUNTY COURT HOUSE, etc.—Bd. Freeholders Middlesex Co., Court House, plans by Alexander Merchant, 1 Elm Row, county court house and office. $4,416,000.

N. J., Princeton—HOUSING—Princeton, N. J., Housing Auth., Princeton, plans by Matthew C. Fleming, Jr., 10 Nassau St., 50 housing units, low rental, $250,000. CD 7/11.

▲ **N. J., Secaucus**—MENTAL HEALTH CENTER—Bd. Freeholders Hudson Co., plans by Barnet Singer, 15 Benmore Terrace Bayonne, County Mental Health Center. addn. $1,800,000. CD 5/31.

▲ **N. J., Vineland**—SCHOOL—Vineland Bd. Educ., high school, $3,500,000.

N. J., West Long Branch—SCHOOL—Bd. Educ., plans by James W. Mancuso, 9 Memorial Parkway, addn. to Locust Ave. School, $500,000. CD 9/4.

▲ **N. Y., Cortland**—SCHOOLS—Bd. Educ., two schools, $1,500,000.

N. Y., Fayetteville-Manlius—SCHOOL—Bd. Educ. voted $1,100,000 bonds Sept. 21, elementary school. CD 5/7.

▲ **N. Y., Freeport**—HOUSING—Freeport Housing Auth. plans by Fellheimer & Wagner, 155 E. 42 St., New York, 100 housing units, $1,500,000. CD 6/26.

▲ **N. Y., Rochester**—HOSPITAL—Dpt. P. Wks., The Gov. Alfred E. Smith State Office Bldg., Albany, hospital addn., two penthouse water reservoir tanks, Rochester State Hospital, $10,000,000.

N. D., Fargo—COURT HOUSE—Cass Co., Court House, plans by Kurke Assocs., 1117 13 Ave. N., 3 story court house addn. $400,000.

▲ **O., Ashland**—HIGH SCHOOL—Bd. Educ., Ashland, Senior High School, on Children's Home Property. $2,300,000. CD 11/9/53.

▲ **O., Cambridge**—SCHOOL—Bd. Educ., bond election Nov. 6, school expansion program. $1,600,000. CD 5/11.

▲ **O., Cincinnati**—SCHOOL—Bd. Educ., 608 E. McMillan St., 2 story, brick, 1200 capacity, North Fairmount Junior High School. Baltimore and Westwood Northern Blvd. $1,850,000. A. M. Kinney, 2905 Vernon Pl., consult. engr.-archt. CD 11/5/54.

O., East Liverpool—SCHOOL—Bd. Educ., Beaver Local School Dist., East Liverpool, grade school along Echo Dell Rd., St. Clair Twp., near here. $600,000.

O., Hilliard—SCHOOL—Bd. Educ., Fred M. Daniel, supt., Scioto Darby School Dist., $530,000 bond election Nov. 6 high school addn., Scioto Darby Rd. $440,000.

O., Lima—LIBRARY—City, City Hall, bond election Nov. 6, library. $880,000.

O., Massillon—HOSPITAL BLDG.—Dpt. P. Welfare, State Office Bldg., S. Front St., Columbus, central food preparation and service unit, State Hospital. $800,000. To go ahead 1958. CD 12/17/52.

O., Mount Healthy—SCHOOLS—Bd. Educ., Harrison Ave., elementary and high schools addns., alterations, $750,000.

Pa., Bloomsburg—CLASSROOM—General State Auth., 18 and Herr Sts., Harrisburg, plans by John A. Schell, Bloomsburg, general classroom bldg., Bloomsburg State Teachers College, $490,000. CD 3/1.

▲ **Pa., Easton**—HOUSING—Easton Housing Auth., Easton, plans by Lovelace & Spillman, 6 W. Broad St., Bethlehem, 72 housing units. $1,021,000. Bids Spring 1957.

▲ **Pa., Elkins Park**—SCHOOL—Cheltenham Twp. School Dist., Elkins Park, plans by Heacock & Platt, 1505 Race St., Phila., 1 and 2 story, brick block, 240,000 sq. ft. Senior High School, parking area, Wyncote, $4,500,000. CD 11/28.

Pa., Kutztown—ART CLASSROOM—General State Auth., 18 and Herr Sts., Harrisburg, plans by Carl A. Eisenhower, 510 Walnut St., Reading, art classroom, Kutztown State Teachers College, $575,000. CD 3/1.

▲ **Pa., Phila.**—HOUSING—Phila. Housing Auth., 42 S. 15 St., plans by Carroll Grisdale & Van Alen, 204 W. Rittenhouse Square, Fitzwater Housing 13 and Fitzwater Sts. $7,650,000, Severud Elstrad Krueger, 415 Lexington Ave., New York, N. Y., consult. engrs. CD 11/29.

▲ **Pa., Phila.**—CHILDRENS SHELTER—Phila. Procurement Dpt., City Hall Annex, plans by Bellante & Clauss, 1810 Rittenhouse Sq., childrens shelter, Washington Lane and Stenton Ave. $1,500,000.

▲ **Pa., Polk**—KITCHEN AND DINING FACILITIES—General State Auth., 18 and Herr Sts., Harrisburg, plans by Mitchell & Ritchey, Alcoa Bldg., Pittsburgh, kitchen and dining facilities, Polk State School, $1,100,000. CD 3/1.

▲ **Pa., University Park**—ENGINEERING BLDG., etc.—General State Auth., 18 and Herr Sts., Harrisburg, plans by Howell Lewis Shay & Assoc., Packard Bldg., Phila., Pa., general engineering bldg., some addnl. alterations, $4,975,000; plans by Buchart Engineering Corp., 611 W. Market St., York, military, air and naval science bldg., $1,640,000; home economics bldg., $1,575,000; agricultural research laboratory, $1,173,000. all at Pennsylvania State University. CD 3/1.

Pa., Warminster—SCHOOL—Warminster Twp. School Dist. plans by John S. Carver, 211 W. Spruce St., Phila., elementary school, York Rd. $750,000. Robert E. McLaughlin, 1411 Walnut St., Phila., consult. engr. CD 2/29.

† **R. I., Newport**—HOSPITAL—First Naval Dist., 495 Summer St., Boston, Mass., plans by Oresto DiSaia, 703 Gardner Bldg., Providence, hospital addn., Rhode Island Naval Hospital, FY-1958. $500,000. Construction 1958. CD 8/27, under Unclassified.

Tex., Bryan—HIGH SCHOOL—Bryan Independent School Dist., Bryan, plans by Phillip G. Norton, Box 1169, steel frame, brick Lamar Junior High School. $480,000. CD 5/25/55.

Tex., Liberty—SCHOOL—Liberty Ind. School Dist., voted bonds Sept. 15, high school wing, $350,000; school gym and training school unit, $375,000. CD 9/4.

▲ **Tex., Midland**—SCHOOL—Midland Ind. School Dist., bond election Oct. 12, elementary school $400,000; elementary school, $475,000; high school unit, $525,250; administration, $600,000. CD 5/24/55.

▲ **Tex., San Antonio**—HOSPITAL BLDGS.—Bd. for Texas State Hospitals & Special Schools, 4405 Lamar Blvd., Austin, plans by Walter C. Moore, superv. archt., c/o owner, medical hospital and occupational therapy, $1,400,000; laundry and laboratory, San Antonio State Tuberculosis Hospital, $300,000. CD 1/23/50.

Utah, Morgan—MEMORIAL, etc.—Bd. Comrs. Morgan Co., voted bonds Sept. 11, memorial bldg. and courthouse, $410,000. Lawrence D. Olpin, 512 Keisel Bldg., Ogden, archt. CD 8/23.

Utah, Salt Lake City—HIGH SCHOOL—Granite School Dist., 3212 South State St., plans by Woods & Woods, 19 West South Temple, Junior High School, Kearns, $850,000. CD 2/3/55.

▲ **Utah, Salt Lake City**—UNIVERSITY BUILDINGS—University of Utah, Bd. of Regents, University and 2 South Sts. educational bldg. $1,300,000; Orson Spencer Hall addn., $763,000; Part 1 of physical education bldg., $1,185,000; maintenance shops addn. $597,000; park bldg. addn. $899,000; engineering bldg. $1,403,000; heating plant addn., $320,000; medical center, $5,000,000, Foregoing to be built in 1957. Part 2 of physical education bldg., $592,000; Part 1 of life science bldg., $648,000; college of engineering, $1,658,000; home economic bldg., $718,000; replacement of warehouses, $520,000; College of Business, $1,080,000. Foregoing is 1959 program. Part 1 of new library, $2,361,000. CD 10/6/54; physical science addn., $759,000; Part 1 of fine arts center, $870,000 Part 3, physical education bldg., $886,000; Part 2, life science bldg., $519,000; pharmacy bldg., $824,000; law bldg., $805,000; classroom bldg., $740,000; Part 3 of engineer bldg., $1,334,000; boiler plant addn., $321,000, Foregoing is 1961 program.

▲ **Va., Richmond**—HOUSING—Richmond Redevelopment & Housing Auth., 100 E. Main St., plans by Ballou & Justice, 106 E. Cary St. and Carneal & Johnston, Atlantic Life Bldg., 447 family unit low rent housing, Fairfield Court, Proj. VA-7-7, $500,000; plans by E. Tucker Carlton, 206 E. Cary St., 447 family unit low rent housing, Whitcombe Court, VA-7-6, $500,000.

▲ **Wash., Cle Elum**—GENERATING PLANT—State Power Comm., Olympia, 312,000 kw steam generating plant, $60,000,000. Work might start late next year. J. F. Ward, c/o owner, dir.

▲ **Wash., Edmonds**—SCHOOLS—School Dist. 15, high school $2,500,000, two elementary schools, each $500,000, in Mountlake Terrace Dist.

Wash., Freeman—SCHOOL—School Dist. 358, plans by K. Storment, Hutton Bldg., Spokane, high school, $450,000. Bids this year. CD 5/16.

Wash., Spokane—SCHOOLS—Central Valley School Dist. 356, N. 607 Pines Rd., bond election Nov. 6, two 18 classroom elementary schools, each $400,000; JUNIOR HIGH SCHOOL, $500,000. CD 11/29/54.

▲ **Wis., Appleton**—SCHOOL—Bd. Educ., Appleton, elementary school, $1,000,000.

Wis., Menomonie—STUDENT UNION—Stout State College, Menomonie, student union bldg., $525,000

Wis., Oshkosh—SCHOOLS—Bd. Educ., Oshkosh, plans by Sandstedt & Knoop, 22 Otter St., Washington Elementary School $484,388; Franklin Elementary School $404,411. CD 8/21/51.

Wis., Portage—SCHOOL—Bd. Educ., Portage, will not construct high school $990,000. Project abandoned. CD 2/15.

Wis., Racine—LIBRARY—Library Bd., 701 Main St., plans by Al J. Seitz, 216 5th St., Racine, Wis. and Keally & Patterson, consult. archts. 17 E. 49 St., New York, N. Y., library, $800,000-$900,000. CD 10/13.

▲ **Alta., Edmonton**—PUBLIC GARAGE—Hudson's Bay Co., 6 story, 100x320 ft., rein.-con. self parking public garage, 600 car capacity, 103rd St., south of Jasper, $1,000,000.

COMMERCIAL BUILDINGS

Calif., Albany—HOSPITAL—Albany Hospital, Marin and Masonic Aves., plans by Mitchell VanBaurg, c/o Hotel Claremont, Berkeley, 1 story, bsmnt., rein.-conc. block, frame and stucco, hospital addn., $350,000.

▲ **Calif., Los Angeles**—STUDENT ACTIVITY—Loyola University, 7101 N. 80th St., plans by Albert C. Martin & Assoc., consult. engrs.-archts., 333 Beaudry St., 4 and 1 story wing, 50,000 sq. ft., concrete frame L shaped student activity bldg., cafeteria, $1,000,000.

▲ **Calif., Sacramento**—STORE—Hales Dpt. Store, c/o Sacramento General Mgr., 9th and K Sts., remodel store and constr. 500 car parking lot, $1,000,000.

▲ **Calif., Sunnyvale**—APARTMENTS—Youritan Constr. Co., 742 Menlo Ave., Menlo Park, 29-apartment buildings $2,000,000.

Calif., Torrance—HOSPITAL—Kent Development Co., 1254 Largo Vista Dr., Beverly Hills, 30,000 sq. ft. 95-bed, frame, stucco masonry hospital, $750,000. Joseph Halpern, 1414 Westwood Blvd., West Los Angeles, consult. engrs.

▲ **Colo., Denver**—COURT HOUSE—General Services Admin., 1900 F St. N. W., Wash., D. C., lease-purchase project, U. S. Court House, $6,420,000. No appropriation. CD 9/29/55 under Public Buildings.

▲ **Colo., Longmont**—HOSPITAL—Longmont Community Hospital, 662 Fourth Ave., plans by Eugene D. Sternberg, 2364 E. 3 Ave., Denver, 3 story hospital, $1,000,000. CD 8/13.

Conn., Bridgeport—OFFICE—Albert D. Phelps, Jr., Riverdale Ave. Properties Inc., 900 Palmer Rd., Bronxville, N. Y., will not construct office, Park and Washington Ave. Over $350,000. Project abandoned.

Conn., Hamden—SCHOOL—Temple Mishkan Israel, 380 Orange St., New Haven, plans by Fritz Nathan, 200 Central Park S. New York, N. Y., religious school, Ridge Rd. $700,000.

Conn., Milford—SCHOOL, etc.—St. Mary's Roman Catholic Church, Gulf St., convent and parochial school, $350,000.

Conn., Orange—HOUSES—Vespoli & Pini, Ridgeview Rd., 66 houses, Orange Center Rd. $660,000.

▲ **Conn., Vernon**—HOUSES—Nathan Gatter Assocs., 11 Asylum St., Hartford, 130 houses, South St. $2,470,000.

D. C., Wash.—SEMINARY—St. Joseph's Seminary plans by Maginnis & Walsh & Kennedy, 126 Newbury St., Boston, Mass., seminary addn. $350,000.

▲ **Fla., Orlando**—BANK—First National Bank at Orlando, 190 S. Orange Ave., bank, Orange Ave. and Church to Boone Sts. $2,000,000.

Ga., Macon—DORMITORIES, etc.—Mercer University, Macon, two dormitories, student center, faculty residences. $750,000.

▲ **Ill., Aurora**—SHOPPING CENTER—Stoner Shopping Center, 328 Gale St., plans by Sidney A. Morris & Assocs., 134 N. LaSalle St., Chicago, 1 story, brick 100,000 sq. ft., 15 unit shopping center, Lake St. N. city limits, $1,500,000.

Ill., Chicago—SCHOOL—Notre Dame High School, 3000 N. Mango Ave., plans by McCarthy & Smith, 69 W. Delaware Pl., 3 story high school addn. $500,000.

Ill., Chicago—YMCA BLDG.—YMCA, 19 S. La Salle St., plans by Eugene White, 19 S. La Salle St., 2 story bsmnt. brick, YMCA bldg. addn. North Ave. at Larrabee, $350,000. CD 9/19.

Ill., Naperville—DORMITORY—North Central College, Naperville, plans by Mittelbusher & Tourtelot, 36 S. State St., Chicago 3, Ill., dormitory, $344,000. CD 9/19.

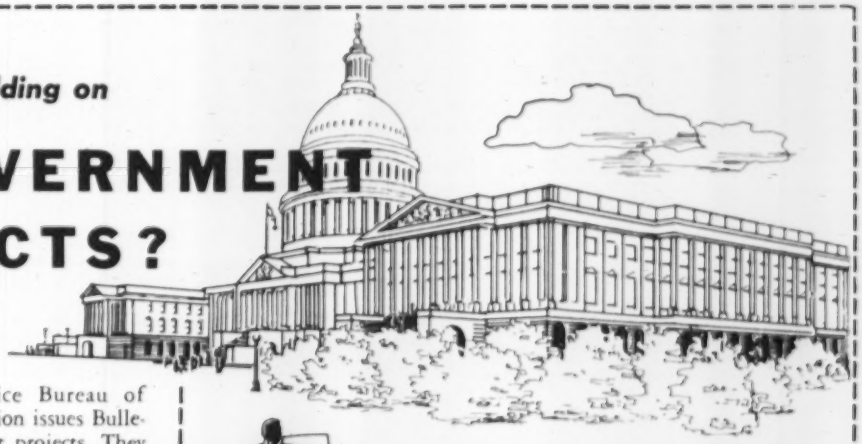
Ind., Greenwood—SHOPPING CENTER—Wm. J. Grossman, 22 E. 63 St., Indianapolis, masonry, structural steel frame shopping center, intersection State Rd. 431 and 31, $345,000.

Ind., Indianapolis—CHURCH—All Souls Unitarian Church, 1453 N. Alabama St., plans by Howard F. Foltz and Martin & Jelliffe, 6100 Millersville Rd., church on 8 acre tract on E. 56th opposite Brendonwood, $400,000.

(Continued on page 126)

Interested in bidding on

GOVERNMENT PROJECTS?



The Washington Service Bureau of National Surety Corporation issues Bulletins on U.S. Government projects. They tell who is issuing the invitations, where bids are being received and when they are being opened. To receive these bulletins, without obligation, write to either of the Central Bonding Offices listed below or to any of our Branch or Service Offices.

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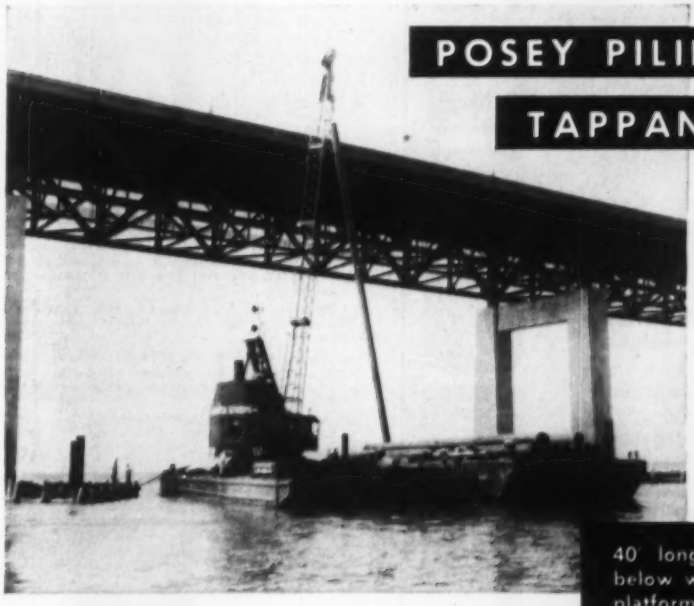

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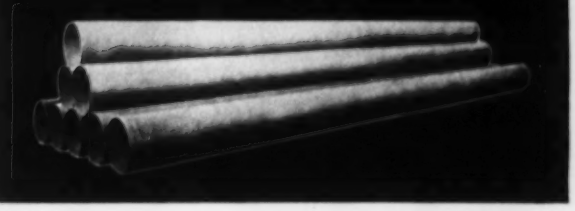

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DREDGE PIPE AND ACCESSORIES

(Continued from page 124)

▲ Ind., Indianapolis—OFFICE—Standard Life Insurance Co., 2727 Washington Blvd., plans by Skidmore, Owings & Merrill, 100 W. Monroe St., Chicago, Ill., 6 story 80,000 sq. ft. office bldg. addn. Fall Creek and Washington Blvd. $1,000,000. Construction this fall.

Iowa, Des Moines—OFFICE—Standard Oil Co. of Ind., 910 S. Michigan Ave., Chicago, Ill., div. office bldg. sales and accounting, on 6 acre site at 10th St. $750,000.

Kan., Great Bend—HOSPITAL—Advisory Bd. St. Rose Hospital & Dominican Sisters (operators) hospital, $500,000.

Kan., Topeka—CHURCH—Countryside Methodist Church, 14th and Burlingame Sts., plans by Marvin Thomas & Assoc., 1109 Topeka, church, $360,000.

La., Alexandria—HEADQUARTERS—La. Baptist, Dr. R. L. Lee, executive secty., 33,000 sq. ft. brick headquarters bldg. located on four acre site on McArthur Drive, $500,000.

▲ Md., Towson—SHOPPING CENTER—Fairmount Bldg., Co. c/o Ralph De Chiaro, 305 Somerset Rd., Baltimore, plans by Lathrop Douglass, 518 5 Ave., New York, N. Y., Sheldon J. Leavitt, 6404 Powhatan Ave., Norfolk, Va., and Seward Mott, 2151 K St., N. W., Wash., D. C., 200,000 sq. ft., brick, concrete, steel shopping center, Duldnun Valley Rd., $5,000,000.

▲ Mass., Pittsfield—OFFICE—Berkshire Life Insurance Co., 7 North St., plans by Cram & Ferguson, 248 Boylston St., Boston, 3 story, 94x268 ft. insurance office bldg., South St. $2,000,000. Bids Spring 1957. CD 8/30/55.

▲ Mass., Worcester—DORMITORY—Clark University, 950 Main St., plans by Cram & Ferguson, 248 Boylston St., Boston, 3 story, masonry, 200 students, men's dormitory $700,000; 3 story, masonry, 150 students, women's dormitory, $550,000; student center and science bldgs. $500,000.

Mass., Worcester—SCHOOL, etc.—St. Peter's R. C. Parish, R. C. Diocese Worcester, 1 Tuckerman St., plans by Diesa & Lampron, 922 Elm St., Manchester, N. H., school and auditorium addn., Ripley St. $350,000.

N. H., Claremont—HIGH SCHOOL—R. C. Bishop of Manchester, Matthew F. Brady, DD, pastor, Rev. Father J. McCart, c/o Diesa & Lampron, archts., 922 Elm St., Manchester, St. Mary's High School. $348,000. Bids about first of year.

▲ N. J., Atlantic City—MOTEL, etc.—Max Malamut, Shelburne Hotel, Michigan Ave. and Boardwalk, plans by Rodney C. Williams, 9 S. Granville Ave., Margate, 131 suite motel, swimming pool, dining deck, ice skating rink, parking area. $1,000,000.

N. J., Burleigh—CLUB HOUSE—Wildwood Golf & Country Club, plans by John A. Fletcher, Vineland, club house bldg., golf course addn., alterations, $344,000. Albert Stubee, Vineland, consult. engr.

N. J., Pompton Plains—HOSPITAL—Bd. Trustees Chilton Hospital, Pompton Turnpike, Pompton Plains, plans by Raymond B. Flatt, 36 Broad St., Bloomfield, hospital addn. $600,000. Constr. in 1957.

N. J., Teaneck—STUDENTS' DINING HALL—Fairleigh Dickinson University, 100 River Rd., plans by Feiltheimer & Wagner, 155 E. 42 St., New York, N. Y.; student's dining hall, $344,000. CD 8/30.

▲ N. J., Trenton—COLLEGE—Rider College, 428 E. State St., plans by Bellande & Clause, 114 West State St., college buildings on new location on Lawrence Rd. opposite Greenacre Country Club, 141-acre, Lawrence Twp. $10,000,000.

N. J., Vineland—SUPERMARKET—American Stores Co. 124 N. 15th St., Phila., Pa., supermarket, Landis and West Aves. $344,000. J. A. Faulhaber, co. engr.

N. Y., New York—HOSPITAL—Beekman-Downtown Hospital, 170 William St., 4 story hospital annex, at site, $400,000.

N. Y., New York—APARTMENT—Joseph Chinich & Sons, 152 W. 42 St., apartment, 222-232 E. 15 St. $500,000.

N. Y., New York—OFFICE, etc.—Diana Stores Corp., 320 W. 40 St. office and warehouse, 443-55 W. 40 St. and 440-52 W. 41 St. $500,000.

▲ N. Y., New York—OFFICE—515 Park Ave. Corp., 120 Wall St., Zone 5, will not convert apartment at 515 Park Ave. into office, $1,400,000. Project abandoned. CD 5/24.

▲ N. Y., New York—OFFICE—100 Church Street Corp., 100 Church St., Zone 7, will not construct, office alterations, $2,474,806. Project abandoned. CD 8/8.

▲ N. Y., New York—APARTMENT—Uris Bros., 300 Park Ave., apartment 3 Ave. between 51 and 52 Sts. $1,000,000.

▲ N. Y., Penfield—HOUSING DEVELOPMENT—Alliance Organization, 350 Main St., Rochester, housing development known as Penfield - acres with 78 new homes, $2,000,000.

▲ N. Y., Yonkers—APARTMENTS—Martin W. Juster, c/o George W. Miller, archt., 125 W. 45 St., 2 six story apartments incl. supermarket, garage and parking space on 5 acre tract at Kimball and Midland Aves. $1,500,000.

▲ O., Akron—MOTEL—Edw. W. Rabb, atty., 746 Upper Merman Dr., representing owners, plans by Bernard Kamenir & Assoc., 918 W. Exchange Bldg., 94 unit motel E. Market St., adjacent to site of old Union Depot, $1,000,000. Constr., November, 1956.

O., Amberley Village—SYNAGOGUE—Sholom Temple, Ross Ave., Cincinnati, plans by George Schatz & Assoc., 309 Ludlow Ave., Cincinnati 1 story, bsmnt., brick, steel synagogue Ridge Ave. $350,000.

O., Cuyahoga Falls—MOTEL—George & Anna Maragas, 5335 Cleveland Ave., N. W., Canton, two story, 46 unit motel, 1754-1762 State Rd., $400,000.

O., Fremont—SHOPPING CENTER—Fremont Development Co., c/o Don Potter, Fremont, shopping center west of city at corner State St. and Oak Harbor Rd. on 17 acre site, $350,000.

▲ O., Marion—SHOPPING CENTER—Marion Shopping, Inc., Carl Glickman, pres., Leader Bldg., Cleveland, Zone 14, plans by Rudolph J. Orgler, 7113 Euclid Ave. Cleveland, Zone 3, 130,000 sq. ft., brick, steel 22-unit shopping center, Rte. 95, west of County Home. $1,100,000. Bids about Dec. 1.

▲ O., Novelty—HEADQUARTERS—American Society for Metals, 7301 Euclid Ave., Cleveland, Zone 3, plans by Skidmore, Owings & Merrill, 575 Madison Ave., New York, N. Y. University type headquarters of six bldgs. First bldg. will be headquarters unit, est. $1,500,000. Second bldg. will be seminar bldg. Total est. $15,000,000. Bids after first of year for headquarters bldg.

O., Toledo—CHURCH—Glenwood Lutheran Church, Monroe St., Dr. Gustave W. Weber, pastor, church, $750,000.

Pa., Cheltenham—GENERAL PURPOSE—Manor College, Fox Chase Rd., plans by Ricker & Axt., 615 Hudson Ave., West New York, N. J., general purpose bldg. $500,000.

Pa., Melrose Park—APARTMENT—George Goodman, 35 Latham Rd., apartment, Willow Ave. $344,000.

▲ Pa., Phila.—HOSPITAL—Kensington Hospital, 136 W. Diamond St., hospital, Conshohocken Ave. $1,000,000.

R. I., Warren—SUPERMARKET—Great Scott Food Markets, Inc., 15 Terminal Way, Providence, plans by Armand G. Carriolo, 985 Hartford Ave., Johnston, supermarket $400,000. Bids in October.

Tex., Bellaire—DWELLING—J. R. DeLay Lumber & Bldg. Co., 242 S. Atwell St., Houston, 18 masonry dwellings, $350,000; 24 dwellings $365,115, in Westbury Addn.

Tex., Corpus Christi—MOTEL—George H. Beck & Assocs., Harlingen, motel, at Padre Island. $425,000.

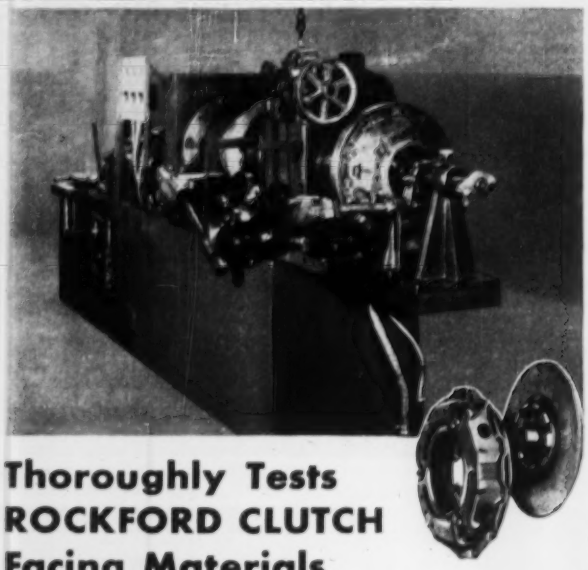
Tex., Edinburg—DWELLINGS—Roger Seaman Constr. Co., 1324 T. Roosevelt Blvd., Alice, plans by J. Harris Heim, 2108 N. Main St., San Antonio, 40 dwellings, $370,000.

Tex., Houston—STORE—Battlestein's, Inc., 812 Main St., plans by Burke, Kober & Nicolais, c/o owner, store expansion in River Oaks. $350,000.

Tex., Houston—DWELLINGS—Big State Constr. Co., 2310 N. Wayside St., 35 dwellings, Beverly Hills. $363,300.

Tex., Houston—DWELLINGS—Cantrell & McMillan, 5348 Inker St., 13 masonry dwellings, Westheimer Ave., $366,665; 11 masonry type dwellings, in Briarbend area, $353,350.

ROCKFORD



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CLUTCHES

▲ **Tex., Houston**—DWELLINGS—Cantell & McMillan, 5348 Inker St., 18 dwellings, $371,190; 10 dwellings, $350,750; 12 dwellings, $365,000; 22 dwellings, $385,500, part $3½ million new bldg. program in Memorial Forest.

Tex., Houston—DWELLINGS—D. & S. Constr. Co., 6311 Pineshade St., 22 dwellings, $355,500; 26 dwellings, $364,450, in Mangum Manor.

Tex., Houston—DWELLINGS—Frank E. Daily Constr. Co., Chocolate Bayou St., 32 frame dwellings, in Beverly Hills. $349,500.

Tex., Houston—DWELLINGS—Faulkner Bldg. Co., 1800 Winkler St., 21 dwellings, $355,000; 24 dwellings, $373,335, in Dunbarton Oaks.

Tex., Houston—DWELLINGS—Alan B. Huvard, 10915 Williwisp St., 12 dwellings, $345,500; 15 frame, masonry dwellings, $365,000, Willowmeadows.

Tex., Houston—DWELLINGS—Bob Jones, 2021 LeRoy St., 20 dwellings, $375,665.

Tex., Houston—DWELLINGS—T. D. Long, Builder, 1620 Cortlandt St., 11 dwellings in Memorial Bend addn. $350,000.

Tex., Houston—DWELLINGS—P. S. Luttrell, Builder, 3205 S. Shepherd St., 23 dwellings, $351,190; 29 dwellings, $369,900, in Oak Forest.

Tex., Houston—DWELLINGS—John A. Mixon, 4925 Doolittle St., 16 masonry dwellings, $361,500; 18 dwellings, $372,225, in Willowmeadows.

Tex., Houston—DWELLINGS—W. B. Moser, Jr., 112 Knox St., 13 dwellings, $349,825; 17 dwellings, $366,195 in Willowmeadows.

Tex., Houston—DWELLINGS—C. H. Nelius, Bldr., 4505 Tonawanda St., 16 dwellings in Willowmeadows. $367,500.

Tex., Houston—DWELLINGS—Ottosen Brothers Building Co., 4847 Stillbrooke St., 25 dwellings, new tract on Freeway. $369,910.

Tex., Houston—DWELLINGS—W. T. Peacock, Contr., 1620 W. 26th St., 14 dwellings in Willowmeadows. $350,000.

Tex., Houston—CLUB—Pine Forest County Club, 500 Garden Oaks Blvd., plans by Mackie & Kamrath, 2713 Ferndale St., club and improv. $350,000.

Tex., Houston—DWELLINGS—R. L. Puckett, 1349 Chantilly St., 8 masonry type dwellings, off N. Shepherd. $350,000.

▲ **Tex., Houston**—DWELLINGS—T. A. Robinson, Jr. & Assoc., 510 Taft St., 18 dwellings, $360,000; 21 dwellings, $358,700; 26 dwellings, $375,000; 28 dwellings, $381,825; 20 dwellings, $371,400, part 80 million Bldg. program in area of Meyerland Subdivision.

▲ **Tex., Houston**—HEADQUARTERS—The Salvation Army, 917 Jackson St., main headquarters bldg. $1,250,000. CD 5/2/45.

Tex., Houston—DWELLINGS—B. R. Sanford, Builder, 8533 Panatella St., 28 frame dwellings, in Beverly Hills. $346,645.

Tex., Houston—DWELLINGS—Andrew B. Seward, 6614 Mercer St., 14 dwellings, Willowmeadows. $359,175.

Tex., Houston—OFFICE—Southwestern Fidelity Life Insurance Co., 3617 Montrose St., plans by Smart & Whitehead, 811 Lovett St., 4 story office, 207 Elith St. $500,000.

Tex., Houston—DWELLINGS—Suburban Homes Lumber & Realty, Builders, 901 Little York, 21 dwellings, $348,500; 28 brick veneer dwellings, $358,885.

Tex., Houston—W. W. Van Dusen & Assoc., 3028 Briarwick St., 30 dwellings in Sec. 5 Meadowcreek village subdivision. $368,000.

▲ **Tex., Houston**—STORE—Walgreen Drug Stores, 1102 Sampson St., store units. $1,500,000.

Tex., Houston—DWELLINGS—Everal L. West, Inc., 10500 Cliffwood Dr., 18 dwellings, $368,115.

Tex., Houston—DWELLINGS—Bill Williams Constr. Co., 2310 N. Wayside St., 33 dwellings in Beverly Hills. $353,360.

Tex., Pasadena—DWELLINGS—Murray G. Hart, Contractor, 4680 Telephone Rd., Houston, 26 dwellings. $355,000.

Tex., Port Isabel (Padre Island)—LUXURY LODGE—Padre Island Surf Club, c/o Dr. J. A. Hockaday, mayor, luxury lodge and resort, $350,000.

▲ **Tex., San Antonio**—BANK, etc.—Groos National Bank, 143 W. Commerce St., plans by Atlee B. & Robert M. Ayres, 342 W. Woodlawn St., multi-story bank and office. $2,750,000. Matthews & Kenan, 1908 Transit Tower Bldg., consult. engrs. CD 9/25.

Tex., San Antonio—HOSPITAL—San Antonio Osteopathic Hospital, c/o O. E. Wurzbach, Hausman Rd., osteopathic hospital, $350,000.

▲ **Tex., Spring Branch**—DWELLINGS—R. V. King, Builder, 12202 Hempstead St., Houston, 34 dwellings, $345,500; 30 dwellings, $348,500; 36 dwellings, $370,000, in Lang Forest area.

▲ **Wash., Aberdeen**—HOSPITAL—Grays Harbor Community Hospital Assn., c/o Judge M. T. Kalin, Court House, 100-bed hospital $1,500,000. Work next year.

▲ **Wash., Ellensburg**—CLASSROOM—Central Wash. College of Educ., Ellensburg, classroom bldg. and physical educ. bldg. $1,000,000 each.

Wis., Milwaukee—CHURCH—Annunciation Greek Orthodox Congregation, 1300 N. Broadway, plans by Frank Lloyd Wright, Taliesin, Spring Green, church. $500,000. CD 11/5/54.

▲ **Ont., Toronto**—HEADQUARTERS—United Church of Canada, 299 Queen St. W., 9 story 77,000 sq. ft., headquarters bldg., St. Clair Ave. E. $1,000,000.

▲ **Que., Ile St. Joseph**—HOTEL—American Sydicate of New York, c/o Marcel Quellette, 1220 Jean Nicolet St., hotel on island site between Three Rivers and Cap de la Madeleine. $5,000,000.

Que., Montreal—HOUSING—Andre Cloutier, 9580 Berri St., plans by Roger Chalifoux, 6275 Papineau Ave., 2 story bsmnt, 20 triplexes, each 30x42 ft., brick walls, stone trim, concrete fdn., tar and gravel roof, housing program, Valmont St. near De Salaberry Ave. $440,000.

▲ **Que., Pont Viau**—HOUSING—Dubord Constr., 233 Cousineau St., plans by Jean B. Chicoine, 5669 De Lorimier Ave., 100 unit housing program 5 and 6 rooms, with garages, concrete fdns. brick walls asphalt shingle roof, $1,250,000.

INDUSTRIAL BUILDINGS

▲ **Ariz., Phoenix**—PLANT, OFFICE—Philzona Petroleum Co., Grand Ave. and 15 Ave., bulk plant and home office, $1,000,000.

Calif., Burbank—ENGINEERING—Lockheed Aircraft Corp., 2555 Hollywood Way, plans by Albert C. Martin & Assoc., 333 S. Beaudry St., Los Angeles, 1 story 200x400 ft. and 2 story 110x400 ft., steel frame engineering and test bldgs.

▲ **Calif., Eureka**—PLANT—Fibreboard Products Co., 475 Brannan St., San Francisco, pulp and paper mill, approx. $30,000,000.

▲ **Calif., Rio Vista**—PLANT—Trojan Powder Co., c/o West Coast Div. Mgr., Lewelling Bldg., San Lorenzo, explosives and chemical plant. $1,500,000.

▲ **Colo., Denver**—PLANT—Air Products, Inc., 733 W. Broad St., Allentown, Pa., liquid oxygen plant, $2,810,000.

▲ **Colo., Denver**—REFORMING UNIT—Continental Oil Co., P. O. Box 2197, Houston, Tex., 3,300 bbl. per day catalytic reforming unit, $1,400,000. Soon lets contract.

Conn., Branford—FOUNDRY—Nutmeg Crucible Steel Co., Elm St., plans by Leo F. Caproni, 1221 Chapel St., New Haven, foundry addn. $100,000.

Conn., Hartford—PLANT—Hartford Courant, 285 Broad St., 3 story newspaper publishing plant addn. $273,000.

▲ **Conn., Stamford**—LABORATORY—American Machine & Foundry Co., 261 Madison Ave., New York 16, N. Y. plans by Perkins & Will, 309 W. Jackson St., Chicago, Ill., six 1 story buildings for Central Engineering Laboratory, High Ridge Rd. and Merritt Parkway, $4,000,000.

Ill., Chicago—FACTORY, etc.—Sherman-Reynolds, Inc., 415 N. Aberdeen St., plans by Fred Prather, 30 W. Washington St., 3 story, brick factory and warehouse, Carpenter and Kinzie. $350,000.

Ill., Chicago—FACTORY—White Cap Co., 1819 N. Major Ave., plans by Olsen Urbain & Sandstrom, 5 S. Wabash Ave., 1 story, brick, 60,000 sq. ft. factory addn. $600,000.

▲ **Ill., Hinsdale**—RESEARCH CENTER—International Harvester Co., 180 N. Michigan Ave., Chicago, 1 story, brick research center between Plainfield and Joliet Rds. $5,000,000.

▲ **Ind., East Chicago**—GENERATING PLANT—Northern Indiana Public Service Co., 5265 Hohman Ave., Hammond, electric generating plant, incl. two units, near here. $40,000,000. Construction in 1957. Sargent & Lundy, 140 S. Dearborn St., Chicago 3, Ill., consult. engrs. Arthur Hartman, c/o owner, engr.

▲ **Ind., Indianapolis**—LABORATORIES—Eli Lilly and Co., McCarty St., control laboratories bldg. adjacent to development and control bldg. at McCarty St. plant, $1,000,000.

Ind., Michigan City—FACTORY—Eastmoor Co., Green St., 1 story, brick clothing factory. $180,000.

▲ **Ky., Henderson**—PLANT—Spencer Chemical Co., 610 Dwight Bldg., Kansas City 5, Mo., nylon molding resin plant, $2,000,000.

▲ **La., Plaquemine**—PLANT—Dow Chemical Co., Freeport, Tex., plant, for caustic soda, chlorine, glycols and oxides of ethylene and protylens; chlorinated solvents hydrochloric acid and other products. $50,000,000.

▲ **Md., Luke**—MILL—West Virginia Pulp & Paper Co., 230 Park Ave., New York 17, N. Y., paper mill addn., incl. waste treatment plant. $50,000,000. Five year program.

Mass., Boston—PLANT—Owner, c/o W. Ballard Co., owner's agt., 45 Milk St., 20,000 sq. ft. electronics plant, $200,000.

▲ **Mass., Worcester**—SERVICE—Norton Co., 1 New Bond St., superstructure Central Service Bldg., New Bond and C Sts. $2,000,000.

▲ **Mich., Bay City**—PLANT—Dow Chemical Co., Dr. W. N. Schuette, mgr., Midland, ethylene plant, 1,000 acre site, mouth of Saginaw River, $12,000,000. To go ahead in the Spring.

▲ **Minn., Savage**—PLANT—Green Giant Co., LeSueur, plans by Gettenburg, Townsend, Stolte & Comb, 1437 Marshall Ave., St. Paul, vegetable canning mfg. plant, site N. of Hy. 101. $1,000,000. CD 3/1.

Mont., Red Lodge—PLANT—Koal Krudes, Inc., Spokane, Wash., constr. plant to produce carbonized coal and creosote. $200,000.

Neb., Millard—PLANT—The Ready Mix Concrete Co., 4315 Cuming St., Omaha, plans by Butler-Bin Co., Waukesha, Wis., concrete plant. $150,000.

N. J., Camden—WAREHOUSE, etc.—Owner c/o Oran Thomas, archts., 122 Haddon Ave., Collingswood, 23,500 sq. ft. brick block, steel warehouse and office. $150,000.

▲ **N. J., Hillside**—MILL—American Can Co., 100 Park Ave., New York 17, N. Y., coil strip processing mill, $2,500,000. Wilcox & Erickson, 11 E. 44 St., New York 17, N. Y., consult. engrs. CD 6/22.

▲ **N. J., Morris Plains**—PLANT—The Mennan Co., Hanover Ave., brick, steel addn. to existing plt. 100,000 sq. ft. of plant and 20,000 sq. ft. office space, $1,000,000. A. M. Kinney, 2905 Vernon Pl., Cincinnati, O., consult. engr.

N. J., Newark—FACTORY—Tung-Sol Corp., 95 8th Ave., plans by Warren Cooper Pattison, 95 Highland Ave., Nutley, factory addn., 8th and Summer Aves. $125,000.

N. J., Pennsauken—BOTTLING PLANT, OFFICE—Metropolitan Bottling Co., c/o Adolph Seiland, 3 W. 57 St., New York, N. Y., plans by Faint & D'Anastasio, 5521 Westfield Ave., Pennsauken, N. J., 1 story, brick, block, steel bottling and distribution plant and office. $500,000.

N. J., Pennsville—GARAGE—Owner, c/o D. H. Hair & Assoc., archts., 38-40 Park Place, Newark, Del., 1 story, 12,000 sq. ft. brick, stucco block garage bldg. $10u,000.

N. J., Pleasantville—OPERATIONS—South Jersey Gas Co., 2001 Atlantic Ave., Atlantic City, plans by J. Vaughan Mathis, Guarantee Trust Bldg., Atlantic City, operations bldg. $160,000.

N. Y., Brooklyn—PLANT—S.T.M.H. Realty Corp., 132 Cook St., plans by Ingram S. Carner, 71-11 Austin St., Forest Hills, 1 story soft drink beverage plant, 101-13 Harrison Pl. $125,000.

N. Y., Olean—PLANT—Haut's Cookie Shops, Inc., Olean, modern baking plant, $150,000.

N. Y., Sayville—FACTORY—Neu-Line Products Corp., 75-10 Ruckaway Blvd., Woodhaven, 1 story factory for plastic items, on 4 acre tract. $100,000.

▲ **N. Y., Yorktown**—RESEARCH CENTER—International Business Machines Corp., 590 Madison Ave., New York, Zone 22, research center between Taconic State Parkway and Pines Bridge Rd. $1,000,000.

O., Findlay—BREWERY, etc.—Krantz Brewing Corp., S. J. Secor, gen. mgr., Jefferson St. and Clinton Ct., brewery, factory and warehouse addns. $500,000. CD 3/11/46.

▲ **O., Middletown**—PLANT—Manchester Machine Co., 807 W. Central St., plant for mfr. papermill machinery on 137 acre site. $2,000,000.

▲ **O., Stratton**—STEAM PLANT—Ohio Edison Co., 47 N. Main St., Akron, increasing capacity of Stratton Steam Plant to 680,000 kw. $116,000,000. CD 12/20.

O., Wickliffe—PLANT—Bailey Meter Co., 1050 Ivanhoe, Rd., Cleveland, Zone 10, plans by McGeorge-Hargett & Assoc., 7016 Euclid Ave., Cleveland, Zone 3, 2-story 72,000 sq. ft. brick, steel plant addn., Worden Rd. and Euclid Ave. $700,000.

▲ **Pa., Broomall**—PLANT—Abbotts Dairels, 31st and Chestnut Sts., bottling plant. $1,000,000.

O., Youngstown—FACTORY—MacKenzie Muffler Co., Inc., J. C. Stewart, vice pres., 460 N. Meridian Rd., factory expansion, factory addn. for mfr. automotive products. $250,000. Work to start in 1957.

O., Youngstown—PLANT—The Moyer Co., 18 N. Walnut St., plans by Damon Worley and Samuels & Assocs., Engineers Bldg., Cleveland, Zone 14, remodel existing plant, 22,000 addnl. sq. ft. $150,000. Bids about Oct. 1.

▲ **Pa., Erie**—PLANT—Kaiser Aluminum & Chemical Co., 1924 Broadway, Oakland, Calif., plant addn. for forgings, $5,000,000.

▲ **Pa., Sellersville**—PLANT—U. S. Gauge Co., Sellersville, plant. $1,000,000.

Tex., Aransas Pass—POWER PLANT, etc.—Walter Carrington & Harold Legge, Littlefield Bldg., Austin, power plant and lines, 131-acre site at Mustang Island. $200,000.

Tex., Brenham—FACTORY—Rogers Bedding Co., Box 808, plans by Edward F. Hildebrandt, Brenham, factory. $100,000. Charles J. Godwin, Bryan, and A. T. Moses, 101 W. 34 St., Austin, consult engrs.

Tex., Duncanville—LABORATORY—Magnolia Petroleum Co., Magnolia Bldg., field research laboratory unit, $200,000.

Tex., Longview—PLANT—Anvil Products, Inc., c/o Pittsburgh Pipe & Coupling Co., (subsidiary), 38 Lamond St., Allison Park, Pa., plant. $350,000.

▲ **Va., Richmond**—PLANT—E. I. duPont de Nemours & Co., duPont and Nemours Bldgs., Wilmington, Del., nylon plant to produce 40 million lbs. fiber annually. To exceed $2,000,000.

▲ **Wash., Chehalis**—PLANT—Goodyear Tire & Rubber Co., 1144 E. Market St., Akron, O. 1 story, 88x240 ft. steel cement block and glass treat rubber mfg. plant. $1,000,000.

W. Va., Nitro—PLANT—Republic Steel Corp., Republic Bldg., Cleveland, O., steel barrel plant near here, $500,000.

▲ **Wis., Milwaukee**—SUB-STATION—Wisconsin Electric Power Co., 231 W. Michigan St., sub-station, S. Water St. $2,000,000. H. E. Mundt, c/o owner, engr. CD 11/22/50.

Wis., Milwaukee—WAREHOUSE, etc.—Wm. Luff, 2532 W. North Ave., plans by A. H. Siewert, 2716 W. North Ave., 2 story, 50,000 sq. ft. warehouse, showroom and office, Heidhofer & Co., lessee.

▲ **N. S., Brooklyn**—PULP MILL—Midland Pulp & Paper Mills Ltd., c/o R. A. Jodrey, Prince St., Hantsport, pulp mill, $3,000,000.

▲ **N.W.T., Belcher Islands**—PLANT—Belcher Mining Corp. Ltd., Adelaide St. E., Toronto, Ont., iron treating and pelletizing plant, docking facilities, at Belcher Islands in S. E. of Hudson's Bay. $40,000,000. Lloyd M. Schofield, 1014 Fidelity Bldg., Duluth, Minn., U.S.A., consult. engr.

▲ **Que., Montreal**—PARTS DEPOT, etc.—International Harvester Co. of Canada Ltd., Sherman Ave. N., Hamilton, Ont., plans by Kyles & Kyles, 247 John St. S., Hamilton, Ont., parts depot and offices, Devonshire Ave. off Cote de Liesse Rd., $1,000,000.

UNCLASSIFIED

▲ **Calif., Los Angeles**—BOAT HARBOR—Los Angeles Dpt. of Parks, Hall of Records, bond election Nov. 6 for small boat harbor at Marina Del Rey, $7,500,000.

Calif., National City—SWIMMING POOL, etc.—City Council, City Hall, plans by Harold Gemeno, 1416 N. Main St., Santa Ana, municipal swimming pool, bath house, and mechanical plant. $275,000.

Conn., Bridgeport—PARKING GARAGE—Bridgeport Park & Shop, Inc., c/o Chamber of Commerce, 1243 Main St., parking garage or parking lot. $300,000.

▲ **Fla., Miami**—RECREATIONAL FACILITIES—City, 3332 Pan American Dr., Zone 33, defeated $1,100,000 bonds Sept. 25 recreational facilities, incl. new golf course between LeJeune and Douglas Rds. from N.W. 14 to 20 Sts. CD 7/17.

Fla., Miami—TRAFFIC SIGNAL—City, 3332 Pan American Dr., Zone 33, voted $500,000 bonds Sept. 25, traffic signal modernization. CD 7/17.

Illinois—RURAL TELEPHONE LINES—Inland Telephone Co., Champaign, sys. rural telephone lines in Champaign Co. $687,000.

▲ **Illinois**—NATURAL GAS LOOP LINE—Texas-Illinois Natural Gas Pipeline Co., 20 N. Wacker Dr., Chicago, 38 mi. 30 in. natural gas loop line from Joliet to connect with Howard St. pipe line in Chicago, $6,411,000. FPC authorized.

Ill., Champaign—DRIVE-IN THEATRE—Frank Stewart & Van Nomikos, c/o Twin City Drive-In, North Market St. Rd. and P. O. Box 26, 1200-car drive-in theatre in Champaign and Urbana area. $100,000.

Ill., Chicago—TRACK—Baltimore & Ohio Chicago Terminal RR., Grand Central Station, 2 mi. spur track to serve industrial site in the village of Alsip, $225,000. John S. Knight, c/o owner, engr.

▲ **Ill., Chicago**—NATURAL GAS LINE—Chicago District Pipeline Co., 122 S. Michigan St., 14.1 mi. 36 in. natural gas line from Howard St. to northerly city limits. $4,600,000. FPA authorized.

Iowa—RURAL TELEPHONE LINES—Farmers Mutual Telephone Co., Stanton, constr. sys. rural telephone lines and services, $179,000.

Iowa, Iowa Falls—SWIMMING POOL—City, City Hall, voted $140,000 bonds Aug. 31, swimming pool, Larkin & Assoc., 19 E. Gregory St., Kansas City, Mo., consult. engrs.

Iowa, Storm Lake—LONG RANGE PROJECT—Northwestern Bell Telephone Co., 604 9th St., Des Moines, long range project addn. to bldg. local and long distance equipment lines, $800,000.

Kansas—TELEPHONE LINES—Carter Telephone Co. Inc., Lane (Lenexa P. O.), Raymond E. Carter, pres. and gen. mgr., constr. 137 mi. new telephone lines, and rebuilding 175 mi. lines in Anderson, Franklin, Lane and Miami Counties. $400,000.

Mass., Framingham—ARMORY—Commonwealth of Mass., Military Dpt., 905 Commonwealth Ave., Boston, armory $350,000.

Minn., Canby—SWIMMING POOL—City, D. D. Stringer, clk., voted $100,000 bonds Sept. 11, municipal swimming pool. CD 2/17.

Minn., Moorhead—SWIMMING POOL—City, P. A. Cook, clk. voted $225,000 bonds Sept. 11, constr. and equip of swimming pool. CD 8/30.

Missouri—RURAL TELEPHONE LINES—Urbana Telephone Co., Urbana, constr. 503.3 mi. rural telephone lines, $299,122. Mid-Continent Eng. Co., 222 W. Walnut St., Springfield, consult. engr.

▲ **Mo., Kansas City**—FREIGHT YARD—Missouri Pacific R.R. Co., W. H. Hobbs, ch. engr., 13 St. Olive to Pine Sts., St. Louis, "push button" freight yard, incl. 52 classification tracks. $11,500,000. CD 5/10/51.

▲ **Mo., St. Louis**—STREET LIGHTING—City, Frank J. McDevitt, pres. B. Pub. Service, 304 City Hall, 12th Blvd. and Market St., design and expedite the installation of modern street lighting standards in various residential areas of city. $1,375,000. Harry G. Hake, 6223 Fairview Ave., Webster Groves, Zone 19, consult. engr. CD 5/31/55.

N. Y., Buffalo—GOLF COURSE—Erie Co., Court House, plans by W. E. Harries & A. R. Tryon, Prudential Bldg., 18-hole golf course and building facilities, $400,000.

N. Y., Cheektowaga—SWIMMING POOLS—Town, Town Hall, 3 swimming pools $150,000 each. Albert Kamm, c/o owner, engr.

N. Y., East Aurora—GOLF COURSE—Bd. Supervs. Erie Co., Court House, Buffalo, county owned golf course in Elma, 4 mi. north of here, $400,000.

N. Y., Idlewild—ANIMAL SHELTER—American Society for Prevention of Cruelty to Animals, 30 E. 60 St. animal shelter 1.4 acre tract at New York International Airport, $180,000.

O., Lakewood—ICE SKATING RINK, etc.—City, 14532 Lake Ave., Cleveland, $500,000. bond election Nov. 6, ice skating rink and swimming pool, John F. Lipaj, The Arcade, Cleveland. CD 7/2.

Pa., Phila.—APE HOUSE—Phila., Procurement Dpt., City Hall Annex, plans by Harbison, Hough, Livingston & Larson, 117 S. 17th St., ape house (conversion of lion house) at zoo, $750,000.

▲ **Tenn., Nashville**—STATE FAIRGROUNDS—Tennessee State Fair Bd., Wedgewood Ave., State Fairgrounds, incl. grandstand; 2 story women's building with auditorium, agricultural and home demonstration bldg., industrial arts and mercantile exhibition bldg. $2,500,000. CD 11/23.

▲† **Tenn., Tullahoma**—WIND TUNNEL—U. S. Eng., Tullahoma, propulsion wind tunnel, Arnold Engineering Development Center. $6,000,000-$7,000,000. Bids about October 1956. CD 11/16/54.

Tex., Ft. Worth—UNDERGROUND PARKING—R. E. Dumas Milner, 3691 Canton Rd., Jackson, Miss., underground parking, $400,000; area lighting in 13 acres, Camp Bowie Blvd., $75,000.

Tex., Galena Park—MUNICIPAL PARKS—City, Hall, bond election Oct. 13 municipal parks. $100,000.

Tex., Livingston—RADIO STATION—Polk Co. Broadcasting Co., c/o P. R. Stripling & Assoc., radio station. $100,000. Guy C. Hutcheson, Arlington, consult. engr.

Washington—RURAL DISTRIBUTION LINE—Grays Harbor PUD, Aberdeen, transmission line along U. S. Hy. 101 from Humptulips to Quinault. $175,000. CD 8/26/54.

Wash., Centralia—RECREATIONAL CENTER—City, City Hall, recreational center, with football field, grandstand, baseball diamond. $120,000. Work to start in spring.

▲ **Wash., Ephrata**—GAS DISTRIBUTION LINES—City, City Hall $550,000 bond election Nov. 6, natural gas distr. sys. $1,350,000. CD 11/10/54.

Wash., Pasco—STADIUM—School Dist. No. 1, bond election Nov. 6, stadium, $200,000. C. F. Griggs, consult. engr. CD 5/19/54.

▲ **Ont., Hamilton**—DOCK—Dpt. P. Wks., Hunter Bldg., Ottawa, 1,200 ft. deep sea dock, foot of Strathearne Ave. $1,500,000.

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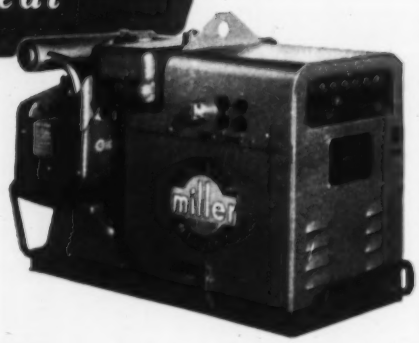

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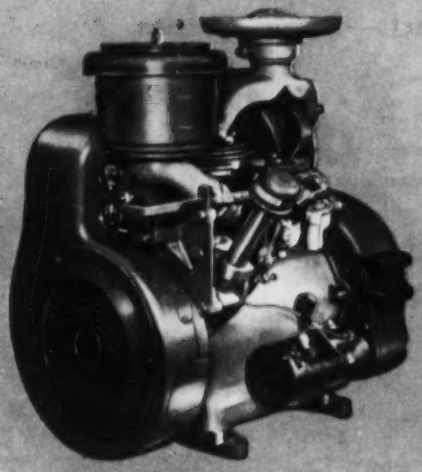

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NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

October 15 Connecticut October 16 Massachusetts

STREETS AND ROADS

October 15 Connecticut October 16, 30 Massachusetts

October 19 Vermont

BUILDINGS—SLC

▲ **Mass., Boston** — OFF-STREET PARKING — Brook Realty, Inc., 180 Lincoln St., Boston, soon lets contract 14 story, 128 ft. high, masonry mechanical off-street parking, Providence St. $1,000,000. Archie Riskin, 262 Washington St., Boston, archt. CD 5/9, under York Realty, Inc. as owner.

HEAVY CONSTRUCTION—LB & CA

† **Landers & Griffin and Morrison-Knudsen, Inc.,** P. O. Box 628, Portsmouth, N. H., LB **$958,813,** est. $1,028,068, modification of Wrightsville Dam, Wrightsville, CIVENG-30-075-57-7, VERMONT. U. S. Eng., 111 E. 16 St., New York, N. Y. Bids Sept. 27. CD 9/6.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Metropolitan Dist. Comn., Parks Div., 20 Somerset St., Boston,

J. F. White Contg. Co., Box 202, Westwood, Mass. CA **$2,896,462,** est. $2,900,000. Proj. 952 reconstr. Longfellow Bridge, Charles River Reservation Memorial Dr. and Cambridge Parkway, Cambridge. Bids Sept. 27. CD 9/6.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

October 26 Pennsylvania November 8 Maryland

STREETS AND ROADS

October 26 Pennsylvania

BUILDINGS—BA

▲ **Md., Towson**—SCHOOL—BA 10/16—Baltimore Co., Bd. Educ., Aigburth Rd., 2 story, concrete block, steel Parkville Senior High School, Parkville, $1,000,000. Plans deposit $50. Fisher, Nes & Campbell & Assoc., 1020 St. Paul St., Baltimore, Zone 2, archts. V. R. Bd. Educ., Aigburth Rd., 2 story, concrete block, steel engr. Egli & Gompf, 1019 N. Calvert St., Baltimore, Zone 2, mech. engrs. CD 7/19.

▲ **Pa., Villanova**—COMMERCE AND FINANCE—BA 10/17—Villanova University, Villanova, 4 story, 75x290 ft., stone, limestone Commerce and Finance Bldg. $1,000,000. Henry D. Dagit & Sons, 1329 Race St., Phila., archts. CD 3/23.

HEAVY CONSTRUCTION—LB & CA

▲ **Certified Constr. Corp.,** 485 Mosel Ave., Grassmere 4, Staten Island, N. Y. LB **$1,582,409** (A) $1,608,051 (B) (4 bidders) Contr. 4A, promenade, playgrounds, parking field, utilities for South Beach improv., NEW YORK. Comr. Parks, Dpt. Parks, Arsenal Bldg., Central Park, 64 St. and Fifth Ave., New York 21, N. Y. Bids Oct. 2. CD 9/18.

Roman Landscape Contg. Co., Inc., 1611 E. 233 St., New York 66, N. Y. LB **$249,253** (5 bidders) Contr. 4B, landscaping, Miller Field to Iona St., (New York).

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

Pa.—**Seigmund Gavlik,** P.O. Box 44, Glenwillard, Pa. LB **$77,243** (3 bidders) surf. existing pavement 3.92 mi. surfacing existing divided hy. 22 ft. wide on each side of a 22 ft. earth medial area, in Ambridge, Baden and Freedom Boroughs, and city of Beaver Falls, T.R. 88 and 18, Beaver Co.;

Pa.—**D. T. Connelly,** Terminal Bldg., Greater Pittsburgh Airport, Coraopolis, Pa. LB **$995,001.** (5 bidders) rein.-con. 4.37 mi., five rein.-con. bridges, between Harmony and Evansburg Boroughs, T.R. 68, Butler Co.;

Pa.—**N. H. Garman & Bros., Inc.,** 102 Neversink St., Reading, Pa. LB **$487,789.** (9 bidders) wid'n. existing divided hy. with crushed aggregate base, 10.06 mi., between Ono and Manada Hill, T.R. U. S. 22, Dauphin and Lebanon Counties;

Pa.—**Broman Constr. Co., Inc.,** P.O. Box 168, Clarion, Pa. LB **$516,395.** (4 bidders) wid'n. existing pavement with crushed aggregate base bit. surf. 3.59 mi., prestressed precast rein.-con. bridge, southeast of Indiana, T.R. U. S. 422, Indiana Co.;

Pa.—**Jos. Ciccone & Sons,** Ivyland, Pa. LB **$677,992.** (4 bidders) crushed aggregate base with bit. surf. 7.16 mi., two metal pipe arches, from Frackville Boro to a point east of Mahanoy City, L.R. 53035 and 53119, Schuylkill Co.;

Pa.—**Latrobe Road Constr., Inc.,** P.O. Box 150, Latrobe, Pa. LB **$113,836.** (2 bidders) surf. existing pavement 2.1 mi., in Jennerstown Boro and vicinity, T.R. U. S. 30, Somerset Co.;

Pa.—**Sweeney Bros., Inc.,** 40 Poplar St., Scranton, Pa. LB **$174,984.** (7 bidders) wid'n surf. 3.14 mi., between Woodhouse and Springville, T.R. 29, Susquehanna Co.;

Pa.—**Middlecreek Constr. Co.,** Middleburg, Pa. LB **$137,782.** (3 bidders) surf. existing pavement with bit. 4.54 mi., exten. of existing bridge, from a point in Mifflinburg Boro westerly toward Hartleton Boro, T.R. 45, Union Co. Bids Sept. 28. CD 9/7.

▲ **Kaufman Constr. Co., Inc.,** 4000 Pulaski Ave., Phila. 40, Pa. CA **$1,138,103.** Bid No. 2600-R, intercepting sewer in private property 34 St. and Vare Ave. between south shaft (Lower Schuylkill East side intercepting system), PHILA., PA. City, Dpt. Procurement, City Hall Annex, Phila., Pa. Bids Sept. 25. CD 9/6.

BUILDINGS—LB & CA

▲ **Frank Droesch, Inc.,** 110-18 Jamaica Ave., Richmond Hill, N. Y. CA Est. **$1,000,000.** 3 story HIGH SCHOOL, Chapham Ave., MANHASSET, N. Y. St. Mary's Parish, c/o Albert F. Meissner, 90-50 Parsons Blvd., Jamaica, N. Y.

▲ **Nicholas Coblio & Sons,** Box 473, Geneva, N. Y. CA **$1,299,148.** general constr. SCHOOL, NEWARK, N. Y. Bd. Educ., Newark, N. Y. Awarded Sept. 11. CD 9/17, under LB.

▲ **HRH Constr. Corp.,** 16 W. 46 St., New York 19, N. Y. LB **$4,692,000.** foundations and general constr. Mill Brook HOUSES (Proj. No. NYS-65) Sect. II, incl. Bldgs. Nos. 1 to 4 (inclusive) incl. children's center in Bldg. No. 3 and community center in Bldg. No. 4 located in area bounded generally by E. 137 St., St. Anns Ave., E. 135 St. and Brook Ave., The Bronx, NEW YORK, N. Y. New York City Housing Auth., 299 Broadway, New York 7, N. Y. Bids Oct. 2. CD 9/18.

E. A. Kahn & Co., Inc., 163-18 Jamaica Ave., Jamaica, N. Y. LB **$368,000.** electrical work (New York, N. Y.);

Far Plumbing Co., 2018 Crotona Parkway, New York 60, N. Y. LB **$534,888.** plumbing work (New York, N. Y.).

▲ **Irons & Reynolds, Inc.,** 420 Lexington Ave., New York 17, N. Y. CA, est. **$1,600,000.** 3 addnl. floors to 8 story GARAGE and STORE at 1120-36 Sixth Ave. and 53 W. 43 St., NEW YORK, N. Y. 50 West 44 St. Corp., 100 E. 42 St., New York 17, N. Y. CD 5/4.

Pompton Knolls Homes, c/o Bernard Hersh, archt., 507 Boulevard, East Paterson, N. J., Owner Builds, **$750,000.** 44 HOUSES on tract at Jacksonville Rd. and The Boulevard, POMPTON PLAINS, N. J.

Pompton Park Estates, c/o C. J. Kordys, archt., 116 Passaic St., Passaic, N. J., Owner Builds, **$800,000.** 38 HOUSES on tract on West Park Way and Jacksonville Rd., POMPTON PLAINS, N. J.

Lyncroft Park Bldg. Co., Inc., Newman Springs Rd., Lincroft, N. J., Owner Builds. **$750,000.** 35 HOMES, Newman Springs Road (second section) LINCROFT, N. J. Harsen & Johns, Railroad & Summit Aves., Tenafly, N. J., archts.

Packanack Wood Corp., 2 Clifton Ave., Clifton, N. J., Owner Builds. **$800,000.** 31 HOMES, Oneida Trail, Wayne Twp., MOUNTAIN VIEW, N. J. Leonard G. Feinen, 320 Lincoln Ave., Hasbrouck Heights, N. J., archt.

Joseph A. Goldman, 37 Wilkens Dr., Dumont, N. J., Owner Builds. **$850,000.** 38 split-level HOMES, West Park Way and Jacksonville Rd., POMPTON PLAINS, N. J. C. J. Kordys, 116 Passaic St., Passaic, N. J., archt.

▲ **S. & G. Padula Builders, Inc.,** 181 N. Washington Ave., Bergenfield, N. J., CA **$2,000,000.** 80 HOUSES on tract at Tenafly Road, TENAFLY, N. J. Walnut Manor Homes, c/o contractor.

▲ **John A. Sarubbi,** Mallory and Plainfield Aves., Jersey City, N. J., CA, est. **$2,000,000.** HIGH SCHOOL, for St. Joseph's Roman Catholic Church, 64 St., WEST NEW YORK, N. J. Chancery Diocese of Newark, 33 Mulberry St., Newark, N. J. Bids July 31. CD 7/17.

▲ **Humphreys & Harding,** Barr Bldg., Wash., D. C. LB **$1,883,475.** (7 bidders) CAFETERIA BLDG. in Court Yard of existing new house office bldg. of U. S. House of Representatives, WASH., D. C. Office of the Architect, U. S. Capitol, Wash., D. C. Bids Oct. 3. CD 9/5.

▲ **Catalina Garden, Inc.,** c/o Howard Berg, Odd Fellows Bldg., 10 and King Sts., Wilmington, Del., Separate Contracts. $5,000,000. RESIDENTIAL DEVELOPMENT, Pencader Hundred, NEWARK, DEL.

▲ **Watkins & Rector,** c/o Howard Berg, Odd Fellows Bldg., 10 and King Sts., Wilmington, Del., Separate Contracts, **$7,000,000.** 600-unit RESIDENTIAL DEVELOPMENT, Todd Estates, Chestnut Hill Estates, NEW CASTLE, DEL.

SOUTH

BUILDINGS—BA

▲ **Tenn., Knoxville**—PLANT—BA 10/25—Foote Mineral Corp., 18 W. Chelten Ave., Phila., Pa. mfg. plant addn. $2,000,000. B. E. Crawford, c/o owner, engr.

HEAVY CONSTRUCTION—LB & CA

▲ **VIRGINIA**—The Richmond-Petersburg Turnpike Auth., 1015 E. Main St., or P.O. Box 1-R, Richmond, Zone 2.

D. W. **Winkelman Co. Inc.,** Box 2566, Greensboro, N. C. CA **$1,654,244.** Cont. A-3-G, Sect. A, grading, drainage, paving and structures from 13 St. to St. James St., City of Richmond. Bids Sept. 11. CD 9/14, under LB.

BUILDINGS—LB & CA

▲ **J. Kennan Perrin Co.,** S and Cary Sts., Richmond, Va., CA **$1,169,336,** Tuberculosis SANATORIUM and St. Phillip's HOSPITAL, RICHMOND, VA. Medical College of Virginia, 1200 E. Broad St., Richmond, Va. Awarded Oct. 1. CD 4/20/51, under Commercial Buildings.

Corfar Constr. Co., 234-72 St., N., St. Petersburg, Fla., LB **$982,000.** JUNIOR COLLEGE addn., CLEARWATER, FLA. Bd. P. Instruction, Pinellas Co., School Administration Bldg., Clearwater, Fla. Bids Sept. 26. CD 9/19.

Raymond L. Tassinari, 1424 N.W. 14 Ave., Gainesville, Fla., CA **$978,357,** LABORATORY SCHOOL, University of Florida, GAINESVILLE, FLA. Florida State Bd. Control, Administration Bldg., Gainesville, Fla. Bids Sept. 12, awarded Oct. 1. CD 9/19, under LB.

▲ **Holiday Constr. Co.,** 1150 193 St., North Miami Beach, Fla., Owner Builds, **$1,300,000.** 160 RESIDENCES, N.W. 183 St. between 14 and 17 Aves., NORTH MIAMI BEACH, FLA. R. J. Schneider, 1431 Flamingo Way, Hialeah, Fla., archt.

▲ **Frank J. Rooney, Inc.,** 5880 N.E. 4 Ave., Miami, Fla., LB **$1,697,878,** general contract RETAIL STORE, Comanche Ave. between 20 and 22 Aves., TAMPA, FLA. Sears Roebuck & Co., Mr. Emory Williams, property mgr., 675 Ponce De Leon Ave., Atlanta, Ga. Bids Sept. 26. CD 9/6.

▲ **Sessions Engineering Co.,** 1 N. LaSalle St., Chicago, Ill. Own Forces. **$1,000,000.** 180,000 sq. ft. PLANT, Steadmantown Lane, FRANKFORT, KY.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

▲ **Ill., Chicago**—BA 10/23—City, City Hall, Section 1-A-2, comp. structures, drainage, paving Keefe Ave. to 73 St., Calumet Skyway Toll Bridge. $1,000,000. DeLeuw, Cather & Co., 150 N. Wacker Dr., Chicago, co-or engr. Friedman, Kornacker Eng. Co., Inc., 53 W. Jackson Blvd., Chicago, sec. engr.

BUILDINGS—BA

▲ **Mich., Farmington**—SCHOOL—BA 10/16—City, Bd. Educ., 33000 Thomas St., Junior High School, $1,000,000. Extended date. Smith, Tarapata, MacMahon, Inc., 894 South Adams St., Birmingham, archt. CD 9/20.

▲ **Mich., Inkster** — SCHOOL — BA 10/23 — Dearborn Twps. Bd. Educ., 4650 Mayfair Ave., Dearborn Twp., Junior High School, $1,000,000. Plans deposit $35, refundable, Eberle M. Smith Assn., Inc., 253 E. Elizabeth St., Detroit, Zone 1, archt. CD 4/10.

O., Toledo—SCHOOL—BA 10/26—Bd. Educ., Oregon School Dist., 5721 Seaman Rd., grade school, Starr Ave. near Coy Rd., Oregon Twp. $800,000. Plans deposit $35. Bellman, Gillett & Richards, 1600 Madison St., archts. CD 11/14.

▲ **Ill., Chicago**—DORMITORY—BA 10/29—University of Chicago, 5801 S. Ellis Ave., 4 story, women's dormitory, bounded by Woodlawn, Kimbark, 58 and 59 Sts. $3,200,000. Eero Saarinen & Assoc., Bloomfield Hills, Mich., archts. CD 7/20/54.

▲ **Ind., Bloomington**—HUMANITIES, etc.—BA 11/8—Bd. Trustees Indiana University, at office J. A. Franklin, vice pres.-treas., Administration Bldg., Indiana University, Bloomington, humanities and social sciences bldg., on campus, Indiana University $5,000,000. A. M. Strauss, Inc., 600 Strauss Bldg., Fort Wayne, Ind., archt.-engr. and Eggers & Higgins, 100 E. 42 St., New York, N. Y., superv. archts. CD 5/21.

▲ **O., Dayton**—PLANT—Bids Asked—McCall Corp., 2219 McCall St., 2 story, 120,000 sq. ft. brick, steel plant addn. $1,000,000. Lockwood Greene Engineers, 41 E. 42 St., New York, N. Y., engrs. CD 5/3.

HEAVY CONSTRUCTION—LB & CA

▲ **The Horvitz Co.,** 4375 E. 146 St., Cleveland 28, O. CA **$2,594,956,** est. $2,760,650, Pleasant Valley Rd. exten. Independence-Valley View, CLEVELAND, O. Comrs. Cuyahoga Co., Court House, Cleveland 13, O. Bids Sept. 24. CD 10/1, under LB.

W. J. Bentley & Bentley Constr. Co., 125 E. National Ave., Milwaukee, Wis., CA **$782,900. Lincoln Ave.,** Viaduct over C. & N.W. Ry. and S. Bay St., MILWAUKEE, WIS. City, City Hall, Milwaukee, Wis. Bids Sept. 25, awarded Sept. 27. CD 10/2, under LB.

BUILDINGS—LB & CA

▲ **The Austin Co.,** 16112 Euclid St., Cleveland, O. CA **$5,500,000.** two PLANT addns., one 500x540 ft. and other 500x500 ft., at 22801 St. Clair Ave., CLEVELAND, O. The Lincoln Electric Co., 22801 St. Clair Ave., Cleveland, O.

▲† **Malan Constr. Corp.,** 2 Park Ave., New York, N. Y. LB **$1,427,000** (4 bidders) RECREATION-THEATER BLDG., 305 Veterans Administration Center, DAYTON, O. Veterans Admin. Munitions Bldg., Wash., D. C. Bids Oct. 2.

▲ **Franklin Bros. Realty Co.,** 4138 Lorain Ave., Cleveland, O. Owner Builds, **$1,200,000.** 60 frame HOMES, W. 211 St., FAIRVIEW PARK, O.

Franklin Brothers Realty Co., 4138 Lorain Ave., Cleveland, O. Owner Builds. **$950,000.** 46 brick veneer HOMES, Dale Ave., ROCKY RIVER, O.

▲ **G. Ray Mathers, Daniel Strayer, Thomas Harper, R. D. Morlan and Berlin-Defenbaugh Co.,** 1366 Thornwood Pl., Columbus, O. CA Est. **$1,000,000.** 101 HOMES, to be known as Blue Flame Village, bounded by Ridgeview Rd., N. Starr Rd., Westminster Dr. and

Wesmont Blvd., UPPER ARLINGTON, O. Northwest Real Estate Co., c/o contractors.

▲ **S. N. Neilsen Co.**, 3059 N. Augusta Blvd., Chicago, Ill., CA $1,329,000. APARTMENT, Pennsylvania block district, EAST CHICAGO, IND. Purdue-Calumet Development Foundation, 3701 Main St., Gary, Ind. Bein, Hall & Curran, 607 Broadway, Gary, Ind., archts. CD 8/1, under CA.

▲ **Crane Constr. Co.**, 201 E. Walton St., Chicago, Ill., CA $2,500,000. Park Ridge Plaza HOTEL, Touhy and Mecham Sts., PARK RIDGE, ILL. Mack, Sher & Assoc., 201 E. Walton Pl., Chicago, Ill. Hausner & Macsai, 104 S. Michigan Ave., Chicago, Ill., archts. CD 9/6.

Pleasant Homes, Inc., 2870 Scott St., Des Plaines, Ill. Own Forces. $750,000. 50 HOMES, SOUTH DES PLAINES, ILL. Tuchschmidt & Assocs., 179 W. Washington Blvd., Chicago, Ill., archts.

▲ **Mayfair Constr., Co.**, 5660 N. Kedzie Ave., Chicago, Ill., CA, $1,500,000. BIOLOGY BLDG., URBANA, ILL. University of Illinois, Urbana, Ill. Holabird & Root & Burgee, 180 N. Wabash Ave., Chicago, Ill., archts. CD 3/18/53.

▲ **George W. Lathrop & Sons, Inc.**, Shaw Lane, East Lansing, Mich. LB $3,197,000 (4 bidders) general constr. RESIDENCE HALL, Proj. No. 87, ANN ARBOR, MICH. The Regents of the University of Michigan, W. K. Pierpont, vice pres., Plant Service Bldg., University and Forest Ave., Ann Arbor, Mich. Bids Sept. 24. CD 8/30;
J. A. Dart Co., Mason, Mich. LB $980,900. mechanical work (Ann Arbor, Mich.);
General Electric Shop, 618 S. Main St., Ann Arbor, Mich. LB $473,280. electrical work (Ann Arbor, Mich.).

▲ **H. F. Campbell Constr. Co.**, 9301 Michigan St., Detroit, Mich. CA Est. $1,550,000. design and construct 1 story, 200x520 ft. FACTORY, Tireman St., DETROIT, MICH. Burroughs Corp., 6071 Second St., Detroit, Mich.

Alfred A. Smith, Inc., 721 Saratoga St., Ferndale, Mich. CA general constr. 1st addn., Alexander Dow SCHOOL, Pembroke St., DETROIT, MICH. Total $802,256. City, Bd. Educ., 1354 Broadway, Detroit, Mich. Bids Aug. 20. CD 8/10;
W. Wilbur White, 14265 Birwood St., Detroit, Mich., CA mechanical work (Detroit, Mich.);
Fogo Electric Co., 19459 Sunset St., Detroit, Mich. CA electrical work, (Detroit, Mich.).

▲ **S & S Building Co.**, 1200 Penobscot Bldg., Detroit, Mich. CA Est. $2,500,000. Fairview Hills Development, 170 brick ranch HOMES, North Milford Rd., MILFORD, MICH. Rose-Hill Realty Co., 14601 East Seven Mile Rd., Detroit, Mich. Scholz Homes, Inc., 2001 N. Westwood St., Toledo, O., archts.

▲ **Harry Slatkin Builders, Inc.**, 11534 Dexter St., Detroit, Mich. Owner Builds. $19,000,000. Thinbark Village Development, 1,200 HOMES, Michigan Ave. and Newburgh Rd., NANKIN, MICH.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
October 18 Texas
STREETS AND ROADS
October 18 Texas

BUILDINGS—BA

Mo., Liberty—STUDENT UNION—BA About 10/19—William Jewell College, Liberty, 3 story, 121x55 ft. student union bldg., 1 story, 50x75 ft. rein.-con. wing, 3 story, 105x165 ft. T-shaped dormitory, $750,000. Extended date. Edward W. Tanner & Assoc., 310 Ward Parkway, Kansas City 12, Mo., archts. CD 8/13.

▲ **Tex., Houston**—HIGH SCHOOL—BA 11/1—Houston Independent School Dist., 1300 Capitol St., Yates area Senior High School. $2,600,000. Plans deposit $100. H. Voelcker & Assocs., 1202 Dennis St., and Milton McGinty, 2425 Ralph St., archts. CD 6/6.

HEAVY CONSTRUCTION—SLC

Tex., Dallas — STEEL FABRICATION — Braniff International Airways, Inc., 3309 Roanoke St., soon lets contract, steel fabrication and erection for Braniff Maintenance Base at Love Field, est. $100,000. Pereira & Luckman, 9220 Sunset Blvd., Los Angeles 46, Calif., archts. Mark Lemmon, 201 Thomas Bldg., assoc. archt. Bids Aug. 27 rejected, LB $855,600. CD 9/6, under LB.

BUILDINGS—SLC

▲ **Tex., Garland**—ENGINEERING CENTER—Temco Aircraft Co., 9314 W. Jefferson St., Grand Prairie, soon lets contract, 337x362 ft. engineering center, $1,000,000; warehousing, $150,000; site area earthwork, grading, $45,000. Plans deposit $40 general constr., $35 mech. Hamilton & Harrell, 819 Republic National Bank Bldg., Dallas, archts. Gregerson & Gaynor, 3010 Blackburn St., and Ziegler, Houseman & Assocs., 1900 N. St. Paul St., Dallas, engrs. CD 7/3.

HEAVY CONSTRUCTION—LB & CA

▲ **MINNESOTA**—State Hy. Dpt., 1246 University Ave., St. Paul.
Industrial Constr. Co., 3050 Fourth Ave. S., Minneapolis, Minn. LB $2,857,682. (7 bidders) constr. Bridge No. 5983 over Minnesota River, Hennepin Co. Bids Sept. 28. CD 9/12.

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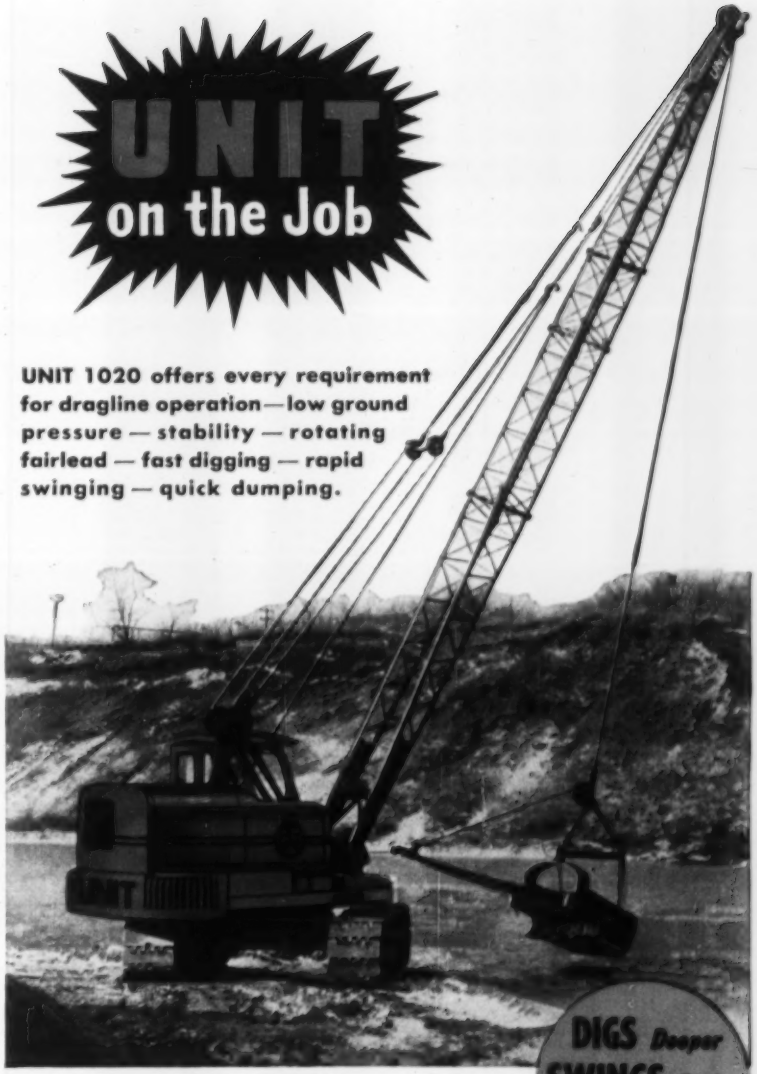

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▲ **MINNESOTA**—State Hy. Dpt., 1246 University Ave., St. Paul,
W. D. Giertsen Co., 900 Glenwood Ave., Minneapolis, Minn. CA **$1,171,905**. bridge and channel change at Clearwater, Wright and Sherburne Counties. CD 9/12, under LB.

▲† **Baldwin-Lima-Hamilton Corp.**, Philadelphia National Bank Bldg., Phila., Pa., LB **$2,671,107** (4 bidders) turbine pumps for Garrison Dam and Reservoir Proj., near Riverdale, Inv. 32-015-57-7, NORTH DAKOTA. U. S. Eng., Riverdale, N. D. Bids Sept. 13. CD 8/23.

▲ **S. R. Brunn Constr. Co.**, 206 Rainbow Blvd., Kansas City, Kan. CA **$1,010,920**. sewage treatment plant improv., Nall Ave. and 49 St., Mission, OLATHE, KAN. Bd. Comm. Johnson Co., Court House, Olathe, Kan. Bids Sept. 25, awarded Sept. 27. CD 10/3, under LB.

▲ **American Bridge Div., U. S. Steel Corp.**, 655 M & M Bldg., Houston, CA **$2,197,358**. Constr. Unit 2, lift bridge superstructure over Tule Lake Channel, CORPUS CHRISTI, TEX. City, City Hall, Corpus Christi, Tex. Bids May 31. CD 6/11, under LB.

MONTANA—State Hy. Comn., Helena,
Riedesel Constr. Co., 2325 Ninth Ave. N., Billings, Mont., and **Schye & Sullivan**, White Sulphur Springs, Mont., CA **$923,481**. constr. 1,317 ft. steel concrete bridge over Yellowstone River, near Glendive, Dawson Co. Bids Sept. 27. CD 9/14.

▲ **MONTANA**—State Hy. Comn., Helena,
Mont.—**G. E. Marshall**, Roundup, Mont., CA **$340,384**. grav. 10.43 mi. Glasgow-Opheim-Canadian Line Rd., Valley Co.;
Mont.—**William W. Strever**, 1661 Poly Dr., Billings, Mont. CA **$224,945**. crush stockpile 187,500 tons grav. from 12 crusher setups, Big Horn, Carbon, Stillwater, Sweet Grass and Yellowstone Counties;
Mont.—**Peter Kiewit Sons' Co.**, 501 St. John's Ave., Billings, Mont. CA **$723,340**. bit. surf. 4.99 mi. Gallatin-Gateway-south road, Gallatin Co.;
Mont.—**Robinson-Cave, Inc.**, 8 Ave. N.W. and River, Great Falls, Mont. CA **$400,238**. grav., 38 ft. timber bridge on 7.07 mi. Raynesford-south road, Judith Basin Co.;
Mont.—**Willis Morris**, Chinook, Mont. CA **$77,079**. road-mix oil, two timber bridges on 1.05 mi. Browning east and west road, Glacier Co.;
Mont.—**Union Constr. Co., Missoula, Mont.** CA **$453,452**. bit. surf. 3.54 mi. Philipsburg-Anaconda Rd. and 4.15 mi. Philipsburg-south road, Granite Co. Grand total $2,219,438. Bids Sept. 27. CD 9/14.

▲ **NEW MEXICO**—State Hy. Comn., State Hy. Bldg., Cerrillos Rd., Santa Fe,
N. M.—**Wylie Bros. Contg. Co.**, 6511 Domingo Rd. N. E., Albuquerque, N. M. CA **$1,476,211**, est. $1,582,812. 6 mi. east of Clines Corners-east, Proj. 1093-A (4), Torrance Co.;
N. M.—**Jack Adams**, 768 Cerrillos Rd., Santa Fe, N. M., CA **$619,321**, est. $776,822. Carlsbad-Urban, Proj. U 022-1 (1) and U 023-1 (5), Eddy Co.;
N. M.—**Longenbaugh & Co., Inc.**, 524 Montano Rd. N. W., Albuquerque, N. M. CA **$134,109**, est. $141,827. Loving-Jal, Proj. S 1271 (5), Eddy Co.;
N. M.—**Henry Thygesen**, 424 Kinley Ave. N. E., Albuquerque, N. M. CA **$235,589**, est. $323,410. Shiprock-West, Proj. S 1341 (1), San Juan Co.;
N. M.—**Haake Constr. Co.**, Agua Fria, Santa Fe, N. M. CA **$90,188**, est. $96,483. Mills Ave., State Hospital, Las Vegas, Proj. S-US-1422 (1), San Miguel Co.; CA **$97,830**, est. $131,104. Roy-West, Proj. S1429 (2) and State Proj. S-1429 (600), Harding Co.;
N. M.—**Wayne A. Lowdermilk, Inc.**, Santa Fe, N. M. CA **$416,313**, est. $446,047. Costilla-Amalia, Proj. S-1531 (1), Taos Co. Grand total $3,069,561. Bids Sept. 28. CD 9/20.

BUILDINGS—LB & CA

State Dpt. Admin., 19 State Capitol, St. Paul, Minn. rejected bids Sept. 21, general contract, 1st unit ADMINISTRATION HOSPITAL, State School and Hospital Proj., BRAINERD, MINN. LB **$988,400**. Will re-advertise. CD 9/26, under LB.

▲ **Northern States Power Co.**, 15 S. Fifth St., Minneapolis, Minn., cancelled bids to have been opened Oct. 1, 1 story, 42,500 sq. ft. service bldg., LAUDERDALE, MINN. **$1,000,000**. Will re-advertise. CD 6/20.

▲ **Wells & Wells, Inc.**, 420 Security Bldg., 319 N. 4 St., St. Louis 2, Mo. CA Est. **$1,750,000**. 4 story, bsmnt., 12x116 ft. MEDICAL BLDG., Clayton Rd. and Brentwood Blvd., CLAYTON (ST. LOUIS 5 P.O.), MO. Randolph Development Corp., Joseph A. Campagna, pres., 18 S. Kingshighway, St. Louis 10, Mo. CD 1/31.

▲ **Jones-Kissner Constr. Co.**, 706 Chestnut St., St. Louis 1, Mo. LB **$1,133,000**. JUNIOR-SENIOR HIGH SCHOOL, incl. 6 bldgs., on Woods Mill near Ladue Rd., CREVE COEUR (ST. LOUIS 24 P.O.), MO. Parkway Consolidated School Dist., Dr. Robert D. Snyder, supt. Schools, Mason Ridge School, Mason Rd. and Daniel Boone Parkway, Creve Coeur 24, Mo. Bids Sept. 18. CD 8/29.

▲ **Don M. Casto Co.**, 420 S. Fourth St., Columbus, O. Owner Builds. **$2,000,000**. Truman SHOPPING CENTER at U. S. Hy. No. 71 and Blue Ridge Rd., near GRANDVIEW, MO. Larry Shaffer, c/o owner, engr.

Harmon Constr. Co., 28 S. Indiana St., Oklahoma City, Okla., CA **$911,335**, general contract, 2 story white stone Supreme COURT HOUSE, etc., LITTLE ROCK, ARK. State, State Capitol, Little Rock, Ark. Bids Sept. 5, awarded Sept. 26. CD 8/15.

▲ **Charles M. Dunning Co.**, 418 N. Hudson St., Oklahoma City 2, Okla. CA **$1,089,848**. U. S. Grant HIGH SCHOOL addn. OKLAHOMA CITY, OKLA. Bd. Educ., 900 N. Klein St., Oklahoma City, Okla. Awarded Sept. 27. CD 9/25, under LB.

▲ **Russ-Webb Motor Co.**, Albany, Tex. Purchase and Hire. **$1,000,000**. MOTOR PLANT remodeling, ALBANY, TEX. CD 9/6.

Thad Dederich Constr. Co., Inc., 1532 Peden St., Houston 19, Tex. CA **$792,300**, M. D. Anderson HOSPITAL and TUMOR CLINIC alterations and expansion in Medical Center, HOUSTON, TEX. University of Texas, Bd. Regents, Austin, Tex. Bids Sept. 18. CD 9/27, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
October 24, 25, 31, California
STREETS AND ROADS
October 24, 25, 31, November 1, 7 California

HEAVY CONSTRUCTION—SLC

▲ **Washington**—Bechtel Corp., engrs., 4620 Seville Ave., Vernon, Calif., soon lets contract 510 ft. high zone-type rolled earth dam, 1,450 ft. long concrete lined spillway, power intake structure 2,125 ft. power tunnel, excavation for powerhouse installing gates, hoists and trash racks for Swift Hydro electric dam on Lewis River for Pacific Power & Light Co., 290 S.W. 6 St., Portland 43, Ore. $45,000,000. CD 10/21/53.

HEAVY CONSTRUCTION—LB & CA

▲† **L. M. Strong Co.**, Springville, Utah, CA **$1,156,224**. earthwork, culverts and access road. Proj. DC 4730, Colorado River Storage Proj., Glen Canyon Unit, UTAH. Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo. Bids Aug. 15. CD 8/24, under LB.

▲† **James Stewart Co.**, 411 N. Central Ave., Phoenix, Ariz., CA, **$1,406,287**, addnl. facilities, hangar, fire and rescue bldg., warehouse, etc., ENG-04-353-56-119 FORT HUACHUCA, ARIZ. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids June 27, awarded Sept. 25. CD 7/2, under LB.

▲ **NEVADA**—Directors Dpt. Hys., State Office Bldg., Carson City,
Isbell Constr. Co., Virginia Rd., Reno, Nev. CA **$2,467,264** (9 bidders) constr. portion State Hy. System from ½ mi. east of Spooners Summit to Jct. US Rte. 395 (Clear Creek) Rte. Sect. 002-1, Control Sects. DO-02 and OR-01, Proj. F-002-1 (8), State Hy. Contr. 971. Douglas and Ormsby Counties. Bids Sept. 27. CD 9/6.

WASHINGTON—State Hy. Comn., Olympia,
Northwest Constr. Co., 3950 6 Ave. N.W., Seattle, Wash., CA **$708,233**. 2 rein.-con. bridge between Capitol Lake Bridge and Boundary St. with clearing, grading 0.9 mi. Primary State Hy. No. 1, Olympia freeway, Thurston Co. Bids Sept. 25, awarded Sept. 27. CD 10/2, under LB.

Judson Pacific-Murphy Corp., 4100 East Shore Highway, Emeryville, Calif., LB **$865,000**. furnishing, erecting more than 1,000 tons structural steel framework for hangar, MOSES LAKE, WASH. Boeing Airplane Co., 7755 E. Marginal Way, Seattle 4, Wash. Bids Sept. 27. CD 9/21.

▲† **General Constr. Co.**, 4850 N.W. Front Ave., Portland, Ore., CA **$1,028,466**, est. $966,459, repair stone revements along shore of McNary Dam Reservoir, Columbia River at 13 locations, Inv. 57-8, OREGON-WASHINGTON. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids Aug. 30. CD 9/6, under LB.

▲ **OREGON**—State Hy. Comn., Highway Bldg., Salem, Ore.—**C. R. O'Neil**, Creswell, Ore., CA **$196,200**, (7 bidders) paving 1.23 mi. Pacific Hy. FIP 1-78 (33), Douglas Co.; CA **$697,708** (5 bidders) grading, paving 1.79 mi. Pacific Hy. FIP 1-78 (32), Douglas Co.;
Ore.—**Rogers Constr. Co.**, 11760 N. E. Glisan St., Portland, Ore., CA **$1,050,740** (8 bidders) grading 3.06 mi. Old Oregon Hy. FIP 1-62 (10), Umatilla Co.;
Ore.—**Warren Northwest, Inc.**, Box 5072, Portland, Ore., CA **$307,977** (8 bidders) grading, paving 11.47 mi. Central Oregon Hy. FAP F-147 (12), Deschutes Co. Grand total $2,252,625. Bids Sept. 27.

▲ **CALIFORNIA**—Bureau P. Rds., Dpt. Commerce, 102 Old Mint Bldg., 5 and Mission Sts., San Francisco,
C. W. Wood & Son, P.O. Box 620, North Hollywood, Calif., LB **$1,263,756** (6 bidders) Placerville-Lake Tahoe Hy. 1.151 mi. Eldorado Co.

City, City Hall, El Segundo, Calif., rejected bids Aug. 27, community recreation center, EL SEGUNDO, CALIF. Will re-advertise.

▲ **CALIFORNIA**—State Div. Hys., 1120 N St., Sacramento,
San Caputo Co. & Dan Caputo, 650 Race St., San Jose, Calif., LB **$1,039,677** (3 bidders) two one-way overhead structures over Southern Pacific Railroad Yard tracks and reconstr. Stanislaus St. and Tuolumne St. between B St. and Broadway to provide one-way approaches, Fresno Co. Bids Oct. 3. CD 9/7.

▲ **CALIFORNIA**—State Div. Hys., 1120 N St., Sacramento,
L. C. Smith Co., 225 Nineteenth Ave., San Mateo, Calif., LB **$1,317,165** (5 bidders) grading, paving, 4.2 mi. 6-lane roadway and Bayshore Freeway between Salinas Ave. and 0.2 mi. north of Butler Rd. in San Francisco and South San Francisco, San Francisco and San Mateo Counties. Bids Oct. 3. CD. 9/7.

BUILDINGS—LB & CA

▲† **J. H. Wise & Sons, Inc.**, Box 267, Boise, Idaho, CA, **$2,643,000**. 150x285 ft. ASSEMBLY and MAINTENANCE BLDG. ADDN. in aircraft Nuclear Propulsion area of National Reactor Testing Station, Proj. AT (10-1-837), ARCO, IDAHO. Atomic Energy Comn., Idaho Operations Office, Idaho Falls, Idaho. Bids Sept. 12. CD 9/19, under LB.

† **Stolte, Inc.**, 8451 San Leandro St., Oakland, Calif., LB **$734,091**. ADMINISTRATION BLDG., TOOL HOUSE, STOREHOUSE, UTILITIES SHOPS, railroad spur, etc., Oakland Army Terminal, ENG-57-9, OAKLAND, CALIF. U. S. Eng., 180 New Montgomery St., San Francisco, Calif. CD 8/22/55.

▲ **Inland Empire Builders**, 5971 Jurupa Ave., Riverside, Calif., CA, **$1,500,000**. COMMERCIAL BLDG., 3635 Plaza Mall, RIVERSIDE, CALIF. Riverside Plaza, Inc., 5971 Jurupa Ave., Riverside, Calif.

▲ **Ralph M. Parsons Co.**, 617 S. Olive St., Los Angeles, Calif., CA, **$8,000,000**. 12,000 bbl. per day catalytic sovaformer, gasoline fractionating and off-site facilities, TORRANCE, CALIF. General Petroleum Corp., Torrance, Calif.

CANADA

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
October 24 British Columbia

BUILDINGS—BA

B. C., **North Vancouver**—SCHOOL—BA 10/30—School District No. 44, 230 W. Keith Rd., 3 story masonry, frame Delbrook Senior High School. $750,000. D. W. Lichtensteiger, 119 W. Pender St., Vancouver, archt.

BUILDINGS—SLC

▲ **Alta., Calgary** — DEPARTMENT STORE — Simpson-Sears Ltd., 176 Yonge St., Toronto, Ont. soon lets contract, construction of footings and foundations for main part of proposed 56,000 sq. ft., rein.-con. department store bldg. Total est. $2,500,000. J. Stevenson & Assocs., 340 7 Ave. W., archts. CD 3/1.

HEAVY CONSTRUCTION—LB & CA

▲ **BRITISH COLUMBIA**—B. C. Govt., Parliament Bldgs., Victoria,
General Constr. Co. Ltd., Granville Island, Vancouver, B. C. and **Bruns & Dutton Concrete & Constr. Ltd.**, Calgary, Alta., LB **$1,137,796** (2 bidders) Proj. 211, Nechako River bridge, near Prince George. Bids Sept. 26. CD 8/30.

BRITISH COLUMBIA—B. C. Govt., Parliament Bldgs., Victoria,
Western Bridge & Steel Fabricators Ltd., 145 W. 1 Ave., Vancouver, B. C., CA **$868,670**. fabricating, erecting steel superstructure for East Pine Bridge at Mile 210.08 north of Prince George on Dawson Creek line of Pacific Great Eastern Railway. Bids Aug. 29. CD 9/10, under LB.

▲ **BRITISH COLUMBIA**—B. C. Govt., Parliament Bldgs., Victoria,
General Constr. Co. Ltd., Granville Island, Vancouver, B. C., CA **$1,092,856**, Proj. 789, 7.25 mi. Trans-Canada Hy., Chase-Sorrento Section. Awarded Sept. 26. CD 9/6, under LB.

▲ **ONTARIO**—Dpt. Hys., Parliament Bldgs., Toronto,
Mount Enterprises Ltd., 806 Dominion Square Bldg., Montreal, Que., CA **$1,297,957**. grading, culverts and gran. base, Trans Canada Hy. 17, from approx. 5 mi. north of Agawa River to 15 mi. north of Agawa River 10.2 mi. CD 10/3, under LB.

▲ **Canadian Dredge & Dock Co. Ltd., Harbor Commission** Bldg., Toronto, Ont., LB **$1,690,621** (14 bids) wharf exten., Wellington St., HAMILTON, ONT. Dpt. P. Wks., Hunter Bldg., Ottawa, Ont.

BUILDINGS—LB & CA

▲ **Poole Constr. Co., Ltd.**, 2402 2 A St. S. E., Calgary, Alta., LB **$3,500,000**. 10½ story, 123x150 ft., rein.-con. OFFICE, 8 Ave. and 7 St. West, CALGARY, ALTA. Canadian Fina Oil Ltd., Bamlett Bldg., Calgary, Alta. Bids Aug. 10. CD 7/31.

▲ **A. R. Grimwood Ltd.**, 1124 Kingsway, Vancouver, B. C., LB **$1,658,660** (6 bidders) group of buildings for FACULTY OF ARTS, VANCOUVER, B. C. University of British Columbia, Vancouver, B. C. Thompson, Berwick, Pratt, 1553 Robson St., Vancouver, B. C., archts. CD 3/11/43.

Peter Kiewit Sons Co. of Canada Ltd., 2182 W. 12 St., Vancouver, B. C., CA **$501,858**. new DIESEL GENERATING STATION, PRINCE GEORGE, B. C. B. C. Power Comn., P. O. Box 500, Victoria, B. C. Awarded Sept. 26. CD 9/7, under LB.

H. J. McFarland Constr. Co. Ltd., Talbot St., Picton, Ont., LB **$749,000** (4 bidders) 2 story, 125x250 ft. HOSPITAL, PICTON, ONT. Prince Edward Co. Memorial Hospital, Box 70, Bloomfield, Ont. Bids Sept. 21. CD 8/29.

▲ **Claydon Co. Ltd.**, 108 Syndicate Ave. N., Fort William, Ont., CA **$1,075,000** (8 bidders) 294x300 ft., structural steel, rein.-conc. frame composite HIGH SCHOOL, PORT ARTHUR, ONT. Bd. Educ., Central School, Port Arthur, Ont. Bids Sept. 20, awarded Sept. 26. CD 9/14.

Bowman Corp. Ltd., 10857 Pie IX Blvd., Montreal, Que., LB **$795,000** (10 bidders) three blocks 25-suite each, 3 story, bsmnt. APARTMENTS, Plymouth Rd., MONTREAL, QUE. Degmey Investment Corp., c/o Thibodeau & Thibodeau, archts., 940 Cote de Liesse Rd., Montreal, Que. Bids Sept. 24. CD 9/17.

(Proposal Advertisement see pp. 145 to 147)

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Neoprene or lead ring gasket
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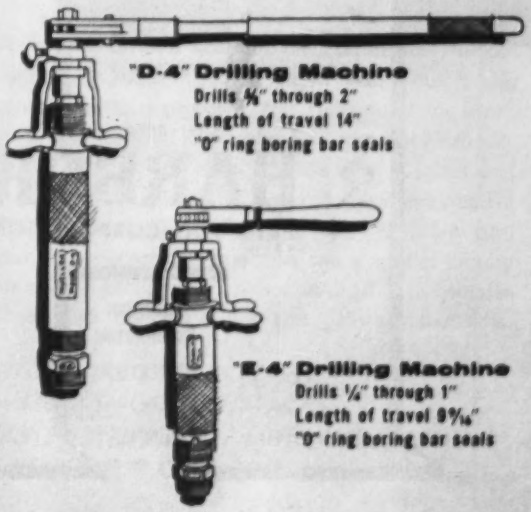

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AVERAGE NUMBER OF RE-USES	10	40	
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*Prices vary in different areas.

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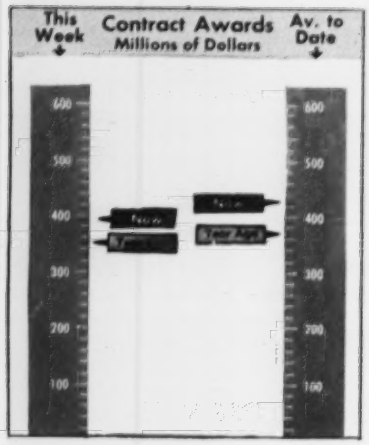
Construction Scoreboard

Activity this Week



AMOUNT OF CONTRACTS LET

By Ownership	This Week	Cum. 41 wks 1956	Chge %
	$ millions		
Federal	$27.7	$1,395.2	+5
State and Municipal	151.2	5,203.2	+22
Total Public	178.9	6,598.4	+18
Total Private	211.4	10,790.5	+15
U. S. Total	$390.3	$17,388.9	+16
By Type of Work			
Waterworks	$2.7	$279.1	+30
Sewerage	9.9	480.8	+51
Bridges	22.8	494.9	+27
Highways	58.9	1,960.8	+12
Earthwork, Waterways	9.7	621.1	+50
Buildings:			
Public, Excl. Housg.	52.4	1,639.9	+19
Public Housing	7.4	275.9	+24
Private Housing	105.6	4,462.3	−12
Commercial	23.2	1,519.8	+15
Industrial	78.9	4,278.4	+91
Unclassified	18.8	1,375.9	−15
U. S. Total	$390.3	$17,388.9	+16

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

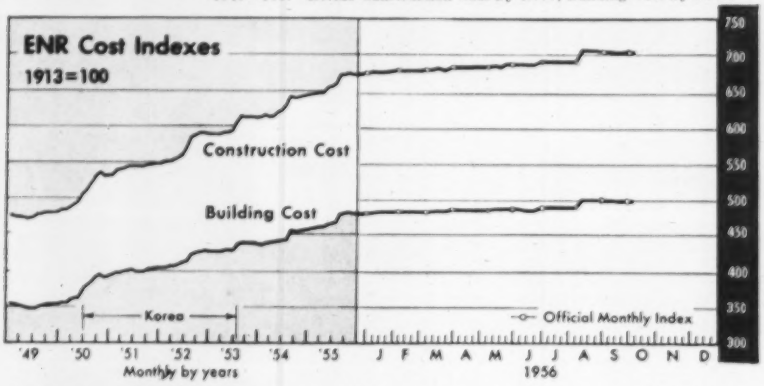
NEW CAPITAL FOR CONSTRUCTION

	Week of Oct. 4	Cum. 40 wks 1956	Chge '55-'56 %
	$ millions		
Corporate Securities	$84.0	$3,868.1	+42
State and Municipal:			
All Except Housing	66.0	3,464.0	+8
Housing	...	42.3	−41
Federal Loans	7.1	132.8	+21
Federal Aid	...	1,070.0	+25
Total Nonfederal	$157.1	$8,577.2	+23
Federal Appropriations:			
In U. S.	$...	$3,460.3	+2
Outside U. S.	...	15.9	−81
Total New Capital	$157.1	$12,053.4	+15

Cost Indexes as of Now

ENR INDEXES (1913 = 100), 20-cities' average	Week of Oct. 4 1956	% Change from Sept. 6 1956	Oct. 6 1955
Construction Cost	704.46	−0.04	+4.6
Building Cost	500.12	−0.02	+4.2

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850.
1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518.



CONTRACTS AWARDED

Millions of dollars	1956 September	1956 9-Mos.	% Change from 1955 Sept.*	% Change from 1955 9-Mos.
Total U. S., ENR reported	$1,480.5	$16,507.7	+ 4	+17
Private	892.7	10,334.1	−0.2	+18
Public	587.8	6,173.6	+10	+16
State and Municipal	452.0	4,852.7	+ 4	+29
Federal	135.8	1,320.9	+39	+ 2
ENR Volume Index, 1913 = 100	580	684	+ 1	+13

*Based on average week.

NEW CONSTRUCTION CAPITAL

Millions of dollars				
Total U. S.	$945.2	$11,896.3	+58	+17
State and Municipal Bond Sales	310.0	3,440.3	+20	+ 9
Corporate Security Sales	635.2	3,784.1	+96	+45
Federal Loans, Aid (nonfederal work)	0	1,195.7	...	+24
Federal Appropriations (federal work)	0	3,476.2**	0	+0.3

**Includes funds for outside U. S.

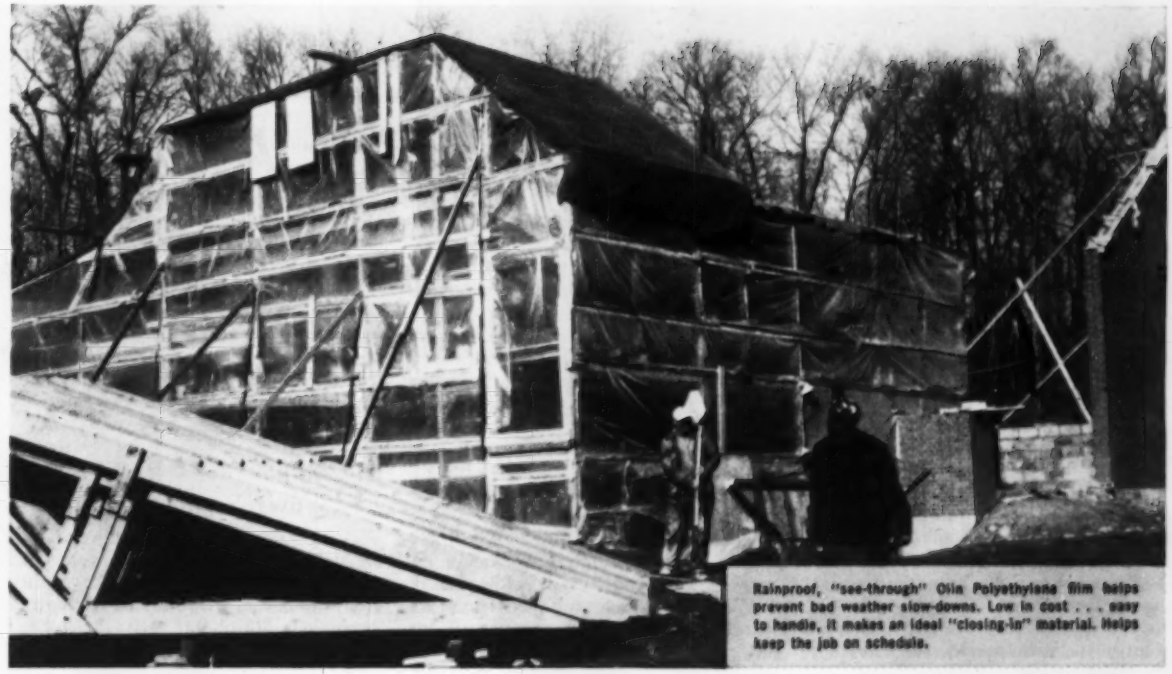
MATERIALS SHIPMENTS

	Unit	1956 June (J) July (Jl) Aug (A)	Cum. (No. of Mos.)	% Change fr. Year Ago Mo.	% Change fr. Year Ago Cum.
Portland Cement, Bur Mines	thous bbls	31,996(J)	142,294(6)	+ 2	+ 5
Conc Paving Awards, PCA	thous sq yd	8,398(A)	60,459(8)	−10	− 8
Fabricated Structural Steel	thous tons	213(A)	2,103(8)	−20	+11
Bookings, AISC	thous tons	268(A)	2,733(8)	−14	+17
Reinforcing Bars, Net, AISI	thous tons	275(J)	1,306(6)	+31	+29
Lumber, NLMA	mil fbm	2,948(Jl)	21,872(7)	− 9	− 6
Orders	mil fbm	2,909(Jl)	21,640(7)	−15	− 9
Production	mil fbm	3,067(Jl)	21,887(7)	+ 1	− 3
Douglas Fir Plywood, DFPA, 3/8" basis					
Production (aver per week)	mil sq ft	103.2(A)	98.4(8)	+14	+ 6
Orders (average per week)	mil sq ft	102.0(A)	92.7(8)	+13	−0.8
Clay Products, Bur Census					
Brick, Ungl., Common, Face	mil bri	632.2(J)	3,349.9(6)	− 8	+ 1
Vitrified Clay Sewer Pipe	thous tons	183.5(J)	884.0(6)	− 7	+ 1
Structural Tile, Unglazed	thous tons	59.5(J)	339.6(6)	−23	−18
Asphalt Products, Bur Census					
Asphalt Roofing	thous sales sqs	5,800(Jl)	34,976(7)	+11	− 3
Asphalt Siding	thous sales sqs	101(Jl)	654(7)	+ 8	− 5
Aluminum, Wrought, Net, Bur Census					
Sheet and Plate (non-heat treatable)	mil lb	94.1(Jl)	681.2(7)	+19	+17
Wire and Cable	mil lb	23.0(Jl)	181.4(7)	+26	+27
Extruded Shapes (soft alloys)	mil lb	53.6(Jl)	381.7(7)	+ 3	+ 8

EMPLOYMENT AND FAILURES

Contract Const Employment, BLS	thous	3,345(A)	2,954(8)*	+ 8	+10
Contractor Failures, Dun & Bradstreet					
Number		146(A)	1,152(8)	+ 9	+30
Liabilities	thous	$7,507(A)	$62,570(8)	−22	+18

*Average per month



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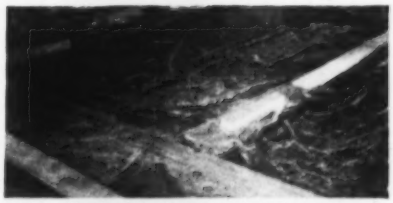
Builders build better at less cost with Olin Polyethylene



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Steel Industry Won't Get Tax Aid—Yet

The Eisenhower Administration last week decided to put a "hot potato"—the question of fast tax write-offs for the steel industry—"on ice" for a few months.

The decision, when it comes, will have a threefold impact on the construction industry: It will affect steel prices, steel supply and future work for engineers, contractors and suppliers (ENR Sept. 20, p. 107).

Arthur S. Flemming, head of the Office of Defense Mobilization, announced that the Administration will not act at this time on any of the steel producers' requests for rapid tax amortization on new plant and equipment.

• **Optimistic anticipation**—In some quarters, there were high hopes that the government would announce a decision at the present time—agreeing to the tax aids.

To support this thinking, some industry spokesmen cited the serious shortages of structural shapes, heavy plates and tubular goods for oil pipelines.

The steel men added that unless the industry is given incentives to expand rapidly, these shortages will get even more serious as additional demand for steel is created by the big roadbuilding program, the pending federal aid to schools and other construction programs.

Opposition also was reportedly softening within the Administration itself.

Secretary of the Treasury George Humphrey and Secretary of Defense Charles Wilson, two high officials who at one time were outspoken in their opposition, seemed more conciliatory recently in their stand on the tax aids.

Largely in anticipation of a favorable government decision, producers sent to Flemming's office requests for fast tax write-offs on nearly $1.5 billion worth of new capacity.

Part of the producers' optimism about a new round of rapid amortization stemmed from Flemming himself. He had publicly promised a review of the program originally initiated during the Korean War.

This review soon went around in government circles. It was sent from the Office of Defense Mobilization to the Defense Mobilization Board. From there it went to the Pentagon, and finally to the full Cabinet.

At one point, the Commerce Department thought it had an acceptable compromise plan that would have called for limited expansion goals—with tax aid—in special cases.

But Flemming suddenly shelved the proposals last week. Announcing a decision he said he had made "On his own," Flemming said he did not feel he could set any new capacity expansion goals until the Pentagon presents its annual review of military budget needs—sometime after the first of the year.

This means two things. First, there can be no overall determination of expansion goals until the early part of 1957. And, no new individual requests will be granted until the overall tax policy decision is made.

• **Political postponement?**—By postponing the decision, the Administration may be taking the question of tax aid for expansion out of the political arena, at least until after the election.

If the government had approved new expansion goals for the steel industry, the Administration would have been charged by the Democrats with "favoritism to big business."

And, if it had flatly turned down the requests, it would have been strongly criticized by steel producers and even by steel users who are of the opinion that the industry's ambitious expansion plans should be pushed ahead as rapidly as possible.

$12-Million Bond Issue Set For Water Supply Project

A $12-million bond issue to finance construction of a dam and water distribution system in the Eureka, Calif., area was passed by voters of the newly-organized Humboldt Bay Municipal Water District.

The district expects to award contracts early in 1957 for construction of a 778,000 cu yd earthfill dam on the Mad River. Contracts also will be let for 13 mi of pipeline.

The district's program is based on an engineering study performed by the Bechtel Corp.

First Flood Insurance Commissioner

Frank J. Meistrell, Deputy Administrator of the Housing and Home Finance Agency, has been named the first commissioner of the Flood Indemnity Administration—the government organization set up to handle the new federal flood insurance program.

The commissioner already has picked up some administrative experience with the new legislation. Immediately after President Eisenhower signed the flood insurance bill Aug. 7, Meistrell was assigned the task of setting up meetings with various representatives from the insurance industry in order to work out details.

Before assuming his new post Meistrell was No. 2 man in the Housing and Home Finance Agency, serving under HHFA Chief Albert M. Cole. A one-time general counsel for the Federal Housing Administration, Meistrell also has been legal counsel for a major insurance company and utilities.

He plans to emphasize the role of private companies in carrying the insurance risks under the new federal program.

Despite the advance planning that preceded Meistrell's appointment, the new program isn't likely to get rolling for some time. The new commissioner himself doubts that the "program will be in actual operation for several months."

Frank J. Meistrell

Contractors eager, but bankers aren't . . .

Lease-Purchase Hits Snag

Big lending institutions have a keen interest in the federal government's gilt-edged contracts for financing lease-purchase projects. But they hadn't quite reached the point last month of laying their money on the line to finance the construction of new federal buildings under the lease-purchase plan.

Only one financing nibble was obtained on each of two good-as-gold proposals that the General Services Administration had advertised in August for September bid openings. And, both of the financing offers were tied to high lump-sum construction bids that kited the two combination offers well above the cost limits.

A totally different picture was presented by construction contractors who submitted separate bids solely for erection of the structures. Each of the projects drew construction bids that appear to fall within the cost limit or not too far above it.

GSA is mildly disappointed but not discouraged by the results of the two September bid openings. The agency already had awarded a financing-construction contract for its first lease-purchase project, which is now under way at Rock Island, Ill. And it sees good possibility of working out acceptable contracts with the bidders on the two projects that failed to produce satisfactory bids last month.

GSA last week showed undiminished confidence in the attractiveness of lease-purchase contracts. It issued invitations for bids on its fourth project, a $3-million federal office building in Huntington, W. Va., with the opening scheduled for Nov. 15. Further, the agency is making no change in its plans to advertise five additional projects within the next three weeks, making a total six that are going out for bids this month.

Here's what showed up in the bid openings for a post office and courthouse in Council Bluffs, Iowa, and a communicable disease center for the Public Health Service in Atlanta, Ga.:

Three construction bids and one combination bid, (covering both construction and financing) were received for the Council Bluffs job, opened at the Kansas City Regional Office of GSA on Sept. 18. No separate financing bids were submitted.

The single combination bid, by the Uteck Corp. of Dallas, offered one financing plan with an interest rate that just meets the 4% ceiling set by the Budget Bureau for lease-purchase projects.

Tied to this offer, however, was a construction price that exceeds the total cost approved by the Budget Bureau and by Congress for the Council Bluffs projects. This approved total must cover all costs, including the value of the land and the architect-engineer fee paid the design firm.

For Council Bluffs, the total is $1,630,000. Uteck set its lump-sum construction price at $1.8 million. Three building contractors put in construction bids that ranged from $1,506,100 to $1,630,000.

GSA people are discussing Council Bluffs' prices this week with bidders and non-bidders alike invited to participate. The agency has hopes of negotiating satisfactory terms. If the discussions fail, GSA will re-advertise.

There are even better prospects for negotiating agreements on the bigger Atlanta job. At the opening in the Atlanta office Sept. 27, GSA again received only one combination bid and no separate financing bids. Here, too, six separate bids for construction only set prices that were much below the construction figure named in the combination bid.

The lone combination offer, in fact, is not iron-clad. The bidder, Robert E. McKee General Contractor Inc. of Dallas, stipulated that he must have 30 days in which to complete the financing, should his bid prove acceptable. If the financing didn't come through in that time, he would withdraw his bid.

McKee's construction price in the combination bid appears to include a huge margin for additional cost of financing. He quoted a price of $11,665,000 in the combination offer, much too close to the allowable total of $12,330,000 for all costs of the project.

Size of the added cost margin asked by McKee is indicated by a separate bid that the same firm made for construction only. Acting purely as a construction contractor, McKee offered to build the job for $9,589,000, more than $2 million under the lump-sum figure in his combination bid.

McKee's separate bid was one of the six construction tenders. Prices quoted by the five other contractors ranged from a low of $9,256,300 to a high of $10,709,773.

GSA feels that it has only to overcome the natural hesitancy of the investigating fraternity toward any financing program that is new and strange to the money managers. The agency knows that it has a risk-free investment to sell to bankers, insurance companies, trusts and pension funds.

GSA can't afford to sit still while a "bankers' strike" holds up the enormous lease-purchase construction program. So, the agency is working hard to make lease-purchase financing even easier, more convenient for investors.

MC-S Shrinks Empire

Marion Power Shovel sold to Universal Corporation

Merritt-Chapman & Scott's merger-molded corporate empire faced some new retrenchment last week.

Louis Wolfson first pulled the black hose banner out of fringe areas in January, has since sold Nesco, Inc., Utah Radio Products, Inc., Shoup Voting Machine Corp. and Newport Steel.

Two weeks ago, he put two MC-S subsidiaries—Marion Power Shovel and the Osgood Co.—on the block. And, last week, the parties concerned announced that Louis Wolfson had a buyer—the Universal Corp., a Washington, D. C., holding company, created by Wolfson when he dissolved that city's Capital Transit Co.

The move provided a field day for second-guessers, but Wolfson himself had a pair of plausible reasons for the unusual sale.

Meritt-Chapman & Scott wanted more cash in the till to build up some of the key operations, e.g. paintmaking subsidiary Devoe & Raynolds is embarking on a development program in the plastics field; New York shipbuilding must invest almost $10 million in a graving dock in connection with a $120-million contract for a Forrestal-class aircraft carrier. MC-S will get the cash it needs in the deal with Universal.

The second reason cited is that since it acquired the New England road-building firm of Savin Construction Corp. in August, 1955, Merritt-Chapman & Scott has been in an embarassing business position. With the big highway program coming along, Marion Power Shovel could expect to cash in heavily. But, as long as MC-S had an equipment maker tied up in the same firm with a roadbuilder, it was—through Savin—competing against some of its potential Marion Shovel customers.

(B & F continued on page 140)

Should State Use "Outside" Engineers?

A lively battle over use of private architects and engineers for design of state public works projects in California will be settled by the voters at the Nov. 6 general election.

A proposed constitutional amendment—Proposition No. 10—is on the ballot. It would enable the state legislature to authorize "the employment of private architects and engineers on a contract basis for the performance of work which the obtainable staff of a state agency is unable to perform within the time the public interest requires such work to be done."

One of the leading advocates of the proposition is State Senator John F. McCarthy, a contractor. In "advice to voters" pamphlets, McCarthy underscores the state's problem in getting engineers and architects to handle the large volume of public works:

"'Yes' votes on this amendment," McCarthy says, "will enable the legislature to provide for a satisfactory method to meet the problems involved in taking care of peak workloads in our state public works program so that such works will be planned, constructed and completed as promptly as possible."

The pamphlet argument against the proposal has been written by another State Senator, Alan Short, an attorney.

Short charges the measure is a "dangerous threat to good state government because it is the opening wedge to the return of the 'spoils system'." He contends that the change would "weaken and undermine the best state civil service system in the nation," and adds that the law would be "confusing and difficult to understand or administer."

• **The opposition**—The proposal faces a well-financed fight. The California State Employees Assn. has a drive under way to raise a campaign fund of $146,000 to defeat the plan.

Another leading opposition group is the Engineers and Architects Assn., which claims that the present law gives state agencies adequate authority to contract work in emergencies and that the amendment would open the door to abuse of the privilege to the detriment of state employees.

The EAA has voted $1,000 to fight the proposal and maintains a committee to urge engineers and architects, including non-members, to oppose it. The EAA's position was sparked by two of its chapters—the Civic Center Chapter and the Metropolitan Chapter.

The Civic Center Chapter includes employees of Los Angeles County, the Los Angeles Department of Water and power and the Los Angeles Flood Control District. The Metropolitan Chapter is composed of engineers with Los Angeles city departments other than water and power.

While members of these two chapters are directly in the public works field, most of EAA's members are not. A majority of the association's 4,200 members are in the aircraft industry.

• **Who's in favor**—Proponents of the constitutional change deny that state agencies now have the authority to turn engineering and architectural work over to private firms in emergencies.

They maintain that court decisions, as well as a two-year study by the Senate Interim Committee on Public Works, have established that because of the wording of certain civil service laws, no contracts may be issued under any circumstances for performance of work for which state civil service employees already have been hired.

Supporters of the amendment say the critical shortage of engineering manpower in state agencies has created bottlenecks and held up highway and other public works construction.

They maintain the amendment does not endanger the civil service system because state agencies could use private engineers and architects only when the agencies could not get necessary personnel and when the work was urgent.

A law to implement the amendment already has been passed by the state legislature. It gives authority to the Division of Architecture for award of design contracts and provides for reviews of the division's action to limit the possibility of abuse.

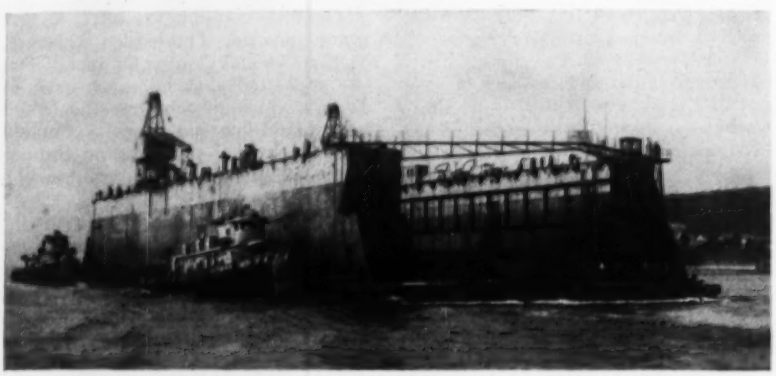
Among those endorsing Proposition 10 are the California Council of Architects, Consulting Engineers Assn. of California, various contractor organizations in the state, a number of major building trades unions, the California State Federation of Labor, the State Chamber of Commerce, the California Taxpayers Assn., the California Manufacturers Assn., the state's Society of Professional Engineers, California chapters of the Associated General Contractors of Ameriea, and the California Real Estate Assn.

Florida Plans November Bond Sale for School Construction

Florida, frequently stymied in recent months by a tight bond market, will attempt to sell $9.3 million in bonds for school construction Nov. 27.

The issue will be the last of a special $100-million school bond program financed from automobile license taxes.

The Florida State Cabinet, which ap-



Largest Floating Drydock Lands a Job

The world's largest floating drydock—the Navy's AFDL-48—has arrived in San Diego harbor, after being towed from its construction site in Seattle. Called "Atlas", the seagoing drydock is 400 ft long, weighs 12,800 tons, and has a lifting capacity of 4,000 tons (ENR, Sept. 16, 1954, p40).

The dock was designed under supervision of the Bureau of Yards and Docks by Di Stasio & Van Buren, New York City consulting engineers, and was built at a cost of $4 million by General Construction Co., Seattle.

The Atlas is now in service at the San Diego Naval Station, a repair base for destroyers and light cruisers, and headquarters for storage, maintenance and recommissioning the Navy's mothball fleet.

proved the bond sale, also ordered a feasibility study on $10 million worth of state office building construction in Tallahassee, Miami, Jacksonville, Tampa and Orlando.

Much of Florida's bond-financed state construction has been delayed by the tight municipal bond market. Every recent issue has been withdrawn because of interest rates that the state considered too high.

The $185-million issue for a 279-mi extension of the Florida Turnpike, originally scheduled to be sold this month, has been indefinitely postponed because of bond market conditions.

Although some bond-financed public works projects can be held up, the school program cannot wait, according to State School Superintendent Thomas Bailey.

Bailey has urged the State Cabinet to offer school bonds that have been validated by the courts, while reserving the right to reject bids for the bonds if the interest rate is too high.

Business Briefs . . .

• **New plant for Euclid**—General Motors' Euclid Division will build a new plant for production of its TC-12 crawler tractor on a 440-acre site in Hudson, Ohio. Construction of the new facility is expected to start by next summer.

• **Shopping centers**—The $32-million Gulfgate Shopping City was formally opened last week as an estimated 125,000 persons jammed the 60-story project located seven miles south of Houston, Texas. While the South's largest shopping center was basking in the limelight, a San Francisco construction firm, Hilp & Rhodes, came up with plans for a $20-million shopping center in the West—at South Ogden, Utah. The builders hope to start work in the spring.

• **Homes for Puerto Rico**—Construction will start soon on a $25-million middle-income housing project near San Juan, Puerto Rico. Sponsor is Ibec Housing Corp. of Puerto Rico, a subsidiary of the Rockefeller-founded international Basic Economy Corp. The 3,200-home project will be built on a hilly 417-acre tract south of the city of Bayamon. Buyers (generally supervisory personnel employed in new industrial plants) will have a choice of nine models ranging in price from $5,690 to $10,500.

• **Plywood prices slip**—Faced with the weakest fir plywood market of the year, major producers cut prices, talked about a cutback in production.

GASOLINE AND LPG ENGINES

Model	Cyl.	Bore	Stroke	Displ.	Bare Engine H.P.
N56	4	2¼	3½	56	14.4 @ 2200 RPM
N62	4	2⅛	3½	62	15.3 @ 2200 RPM
Y69	4	2½	3½	69	21.4 @ 2400 RPM
Y91	4	2⅞	3½	91	28.5 @ 2400 RPM
Y112	4	3⅛	3½	112	32.0 @ 2400 RPM
F124	4	3	4½	124	36.5 @ 2400 RPM
F140	4	3⅛	4½	140	42.0 @ 2400 RPM
F162	4	3⅜	4½	162	49.0 @ 2400 RPM
F186	6	3	4½	186	60.5 @ 2400 RPM
F209	6	3⅛	4½	209	68.0 @ 2400 RPM
F226	6	3⅜	4½	226	73.0 @ 2400 RPM
F244	6	3⅛	4½	244	79.0 @ 2400 RPM
M271	6	3⅝	4½	271	86.2 @ 2400 RPM
M290	6	3¾	4½	290	92.2 @ 2400 RPM
M330	6	4	4½	330	104.4 @ 2400 RPM
M363	6	4	4 11/16	363	128.9 @ 2800 RPM
B371	6	4⅛	4⅝	371	110.0 @ 2400 RPM
B427	6	4 5/16	4⅝	427	127.0 @ 2400 RPM
G134	4	3½	4½	134	34.2 @ 2000 RPM
G157	4	3½	4½	157	40.0 @ 2000 RPM
E201	4	3⅝	4½	201	65.4 @ 2400 RPM
H227	4	3⅝	5½	227	54.0 @ 1800 RPM
H243	4	3¾	5½	243	57.9 @ 1800 RPM
H260	4	3⅞	5½	260	62.0 @ 1800 RPM
H277	4	4	5½	277	66.4 @ 1800 RPM
K363	6	4	4 11/16	363	123.0 @ 2400 RPM
J382	4	4½	6	382	74.0 @ 1400 RPM
T371	6	4⅛	4⅝	371	119.0 @ 2400 RPM
T427	6	4 5/16	4⅝	427	140.0 @ 2400 RPM
U501	6	4½	5¼	501	159.0 @ 2400 RPM
R513	6	4½	5½	513	164.3 @ 2400 RPM
R572	6	4¾	5½	572	182.4 @ 2400 RPM
R602	6	4⅞	5½	602	191.7 @ 2400 RPM
V603	8	4¼	4¼	603	220.0 @ 2800 RPM
S749	6	5¼	5½	749	217.0 @ 2200 RPM
S820	6	5⅜	5½	820	237.0 @ 2200 RPM

CUSHIONED POWER DIESEL ENGINES

Model	Cyl.	Bore	Stroke	Displ.	Bare Engine H.P.
ZD129	4	3¼	3⅞	129	34.0 @ 2000 RPM
GD157	4	3½	4½	157	39.0 @ 2000 RPM
*ED201	4	3⅝	4½	201	45.8 @ 2000 RPM
HD243	4	3¾	5½	243	55.0 @ 2000 RPM
*HD260	4	3⅞	5½	260	59.0 @ 2000 RPM
*HD277	4	4	5½	277	63.2 @ 2200 RPM
*JD382	4	4½	6	382	72.5 @ 1600 RPM
TD427	6	4 5/16	4½	427	106.0 @ 2000 RPM
RD572	6	4¾	5¼	572	154.0 @ 2000 RPM
VD603	8	4¼	4¼	603	175.0 @ 2600 RPM
SD802	6	5 9/16	5½	802	202.0 @ 1800 RPM

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Another Jurisdictional Whirl

Carpenter and lather dispute hits Cleveland projects and winds up in the lap of the National Labor Relations Board

Still shadow boxing with some of the failures of present procedures for settling jurisdictional disputes in the construction industry, The National Labor Relations Board has again entered the perennial conflict between carpenters and lathers over installation of acoustical ceilings.

The present dispute—which poses the critical question of how deep the NLRB will let itself become involved in construction work assignments—is in Cleveland, Ohio. Like most of the others, the dispute relates to T-bar and gypsum board installation, the intermediate steps in ceiling work, on either side of which there is an amicable distribution of work between the two crafts.

In accordance with spot decisions issued by the National Joint Board for the Settlement of Jurisdictional Disputes in similar cases, Cleveland contractors have been assigning the disputed work to carpenters over the protest of the lathers. The conflict came to a head shortly before Labor Day and for nearly a month stalled work on 16 projects in the area.

• **Settlement efforts**—The dispute was referred to the Joint Board, which unsuccessfully ordered the lathers back to work. The acoustical contractors then went before the NLRB, charging the lathers with a Sec. 8(B)(4)(d) unfair labor practice—engaging in work stoppages to force an employer to assign work to them instead of to another craft. And then the NLRB turned to the federal district court for an injunction to get the lathers back to work.

In a counter-action, the lathers charged the carpenters with an unfair labor practice and the NLRB consented to cite the carpenters in as a defendant along with the lathers. At this point, the lathers agreed to return to work pending disposition of the case by the NLRB. This left the district court without a "dispute." The court is holding its action in abeyance—with the result that an injunction hangs over the heads of both unions if further stoppages occur.

After work resumed, the Joint Board switched its machinery on again and ground out 16 decisions—one for each dispute—and all were in favor of the carpenters. The case is now back in the lap of the NLRB, which is not apt to render any decision on the fundamental issue of which craft should do the disputed work. If that is the case, the only achievement will be that costly litigation could provoke two federal agencies into effectively supplementing the work of the Joint Board only to cure the symptoms without affecting the disease.

• **What next?** An identical situation arose in New Jersey in August and is now before the NLRB in New York (ENR Sept. 6, p. 175). Both cases represent an interesting departure by the NLRB from the doctrine it announced last year in the Lee case. If the Lee case meant anything, most observers thought it meant that the board would exercise the right, permissively granted by Sec. 10 (K) of the Taft-Hartley Act, not to entertain a jurisdictional dispute where the parties have their own machinery, such as the Joint Board, for settling such disputes. Since the Lee case, however, the board has shown an inclination to pay less and less attention to Sec. 10 (K), although it hasn't yet reached the point of upsetting or overruling the Joint Board.

Mixed up in the carpenter-lather situation, which the federal judge in the New Jersey case called "chaotic," is the constitutional change made by the AFL-CIO Building and Construction Trades Department requiring all of the building trades to be bound by the Joint Board procedure. The lathers have objected to this and the outcome of that problem may well have some influence on the role the NLRB decides to play in carpenter-lather jurisdictional disputes.

Entwined with this is the feeling, shared by some, that the Joint Board, as now established, is perhaps not the best approach. Some of these views were aired by the lathers at the time the Lee case was argued. And when the acoustical ceiling injunction was granted against the New Jersey carpenters and lathers, the court indicated that, despite the Joint Board rulings, an "equitable decision" has not yet been reached as to the proper jurisdictional boundary lines of the two crafts.

Wages as a Factor in the Cost of Living

The age-old debate over wages versus profits is being renewed with considerable vigor as the cost of living hits an all-time high. With politics giving the issue of inflation a new dimension, labor finds itself on the offensive, the Administration on the defensive.

In July, the Bureau of Labor Statistics Consumer Price Index reached its highest level—117—but slid back to 116.8 in August. According to U. S. Secretary of Labor, James P. Mitchell, it is now 2½% above the 1952 level. But last week Mitchell said the situation isn't as bad as it sounds—current wage levels are at a record high and the net result is that real wages have increased 7½% in the last four years.

To several AFL-CIO unions, however, the picture is worse than it ought to be, not because of labor costs, but because of pricing policies and bigger profits.

The auto workers union, for example, takes the position that unjustified price fixing—which UAW President Walter Reuther would make the subject of a Congressional investigation—is the critical issue in higher living costs and says there "can be no justification for blaming price increases on increased labor costs." It claims that the profit margins of the leaders in its industry "leave ample room to absorb the cost of steel price increases and wage increases combined, even if the latter were not more than offset by productivity advances." UAW says, failure of industry to absorb these increases results in a "price gouging of the public" that feeds the "fires of inflation."

Similarly criticizing post-steel strike increases in steel prices, the steelworkers union has refuted any relationship between wage increases and inflation. "Any inflationary tendencies that may exist in our economy," it maintains, "stem not from wage and salary increases, which are vitally needed, but from pricing policies of industry generally and particularly the steel industry."

Some of the building trades have also entered the controversy. The carpenters claim that construction wages aren't the "main culprit" in the current level of building costs and point out that the worker, in terms of his share of the construction dollar, is "barely holding his own." And the electrical workers say that labor critics,

who tend to use wages as a scapegoat for too many things, often overlook "exorbitant profits" of "some" construction firms. Both unions, in justification of current wage rates, cite the seasonal nature of construction employment, the high degree of skills required of construction workers and the increase in productivity.

Lockout Confusion

Law effectively limits multi-employer activity

The real effectiveness of multi-employer associations for collective bargaining purposes will be severely limited if the members of such associations are denied the right to engage in united defense action, such as a lockout, when one of the members is struck, according to Theophil Kammholz, National Labor Relations Board general counsel.

Discussing the problem at a San Francisco meeting of the American Trucking Association, Kammholz said the law on the point is now in such confusion that the U. S. Supreme Court has been asked to rule on the issue.

Originally, the NLRB took the position that where a union struck one member of an association and the other members locked out their employees in anticipation of successive strikes against them, the lockout was a violation of the Taft-Hartley Act. After the Circuit Court of Appeals for the Ninth Circuit overruled the board in a later case, the NLRB swung around to the view that whipsawing strike action does justify a group lockout as a countermeasure of protection. But the board was again overruled—this time by the Second Circuit, which disagreed with the Ninth Circuit.

The importance of that decision, according to Kammholz, is that it places "a limitation upon the practical operations of a multi-employer association."

Work Assignments

A new jurisdictional pact cuts out the Joint Board

Under terms of an international agreement negotiated by two of the building trades, jurisdictional disputes between the plumbers and sheet metal workers will be handled in the future by the two unions on the local level and not by the National Joint Board for the Settlement of Jurisdictional Disputes.

The agreement between the United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry and the Sheet Metal Workers' International Association covers the allocation of work involved in the installation of cooling, heating and air conditioning units; room radiators and enclosures for heating units; and kitchen equipment. Reached under the auspices of the unions' general presidents, Peter T. Schoemann and John J. McCartin, the agreement specifies in detail which union does what, including the unloading and handling of equipment. A supplementary agreement outlines the procedure for settling disputes.

Henceforth, no disputes between the two unions will be sent to the Joint Board. They will be handled, instead, by the unions on the local level. Questions of interpretation will be referred to the general officers. Disputes over work not covered by the agreement will go first to local union representatives. If not resolved, they then will be referred to an international representative of each union, and, if that fails, to the general officers of the unions.

Contract Duration

Flexibility is as important to the AFL-CIO as length

Acceptance of a long-term labor contract is a "very substantial union concession," according to the AFL-CIO, and it shouldn't be "sold cheaply."

In the September issue of its "Collective Bargaining Report," the labor federation takes the position that current emphasis on long-term contracts may create the false impression that such contracts are closed to further bargaining and do not permit wage or other adjustments until their expiration. It's not concerned with questions of definition—whether a contract is long term in name and not in fact—but with the results that follow from this premise it advances: In most instances the future cannot be predicted with enough certainty to warrant irrevocable and long-term commitments on wages and working conditions.

• **No uniformity**—Because of this, according to the AFL-CIO analysis, long-term agreements are of different types. In practice, they usually embrace some form of the "living document" rather than the "closed contract" theory—provisions of one kind or another are included to keep the door open for meeting changed conditions.

Opposition of most unions to the long-term contract, the report asserts, stems from the desire for flexibility. Unions that have negotiated contracts for more than a year in length usually have done so in the belief that more liberal concessions have been obtained from management.

• **Forms of flexibility**—The "most common means" of allowing for future adjustments, says the AFL-CIO, is the use of reopening clauses. In some of these the right to strike is specifically reserved and carefully phrased. About half of the reopening clauses used become effective on a specified date. The rest become operative on the occurrence of some specified condition.

Another means of flexibility utilized by probably a quarter of existing long-term contracts, according to the AFL-CIO, is use of deferred wage increases—fixed amounts on specified dates. These are of two kinds. One, typical of the construction industry, fixes the amount without regard to fluctuations in the cost of living. The other, favored by the auto and steel industries, combines fixed increases (called "improvement factors") with increases based on the cost-of-living index in order to insure continuing improvment in the workers' standard of living.

In the final analysis, the AFL-CIO notes, there is no common formula for long-term agreements. They may be "reasonable and sound" in some situations, "unwise" in others. The controlling factors are numerous and diverse, but the one suggested by the AFL-CIO as most significant is that of flexibility. A "closed" long-term agreement, it notes, is "no guarantee of constructive or rewarding labor-management peace," whereas a provision for future adjustments can serve as a safety valve advantageous to both labor and management in many respects.

Inability to correct inadequacies or inequities that may arise as conditions change, according to the AFL-CIO, may produce considerable unrest and deterioration of worker morale, even though there may be no work stoppage. And some union representatives feel that more constructive and better labor-management relationships can be maintained where mutual problems are raised and discussed at reasonably short intervals. Another factor noted by the AFL-CIO is the fear of some smaller unions that long-term agreements may tend to make them grow weaker.

(*Labor continued on page 145*)

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Bargaining Units

Engineering society would disallow the inclusion of nonprofessional employees

In a "friend of the court" brief, the National Society of Professional Engineers has asked the U.S. District Court for the District of Columbia to reverse a rule of the National Labor Relations Board that permits nonprofessional employees to vote with professional employees in determination of collective bargaining representation questions as long as composition of the unit remains "predominantly professional."

The argument advanced by NSPE is that the law does not permit arbitrary inclusion by the board of nonprofessional employees in a voting unit with professionals.

The case before the court involves a bargaining unit at the Buffalo, N. Y., plant of Westinghouse Electric Corporation. Included in the unit by the NLRB are 233 professionals and nine nonprofessionals. The professional employees are attempting to prevent inclusion of the non-professional employees.

According to NSPE, the "predominantly professional" theory of the labor board is contrary to both the language and the legislative history of the Taft-Hartley Act. Sec. 9 (B) of the act, which is designed to insure employees "the fullest freedom" in the exercise of their collective bargaining rights guaranteed by the law, provides that the NLRB shall not determine any unit to be appropriate if it includes both professionals and nonprofessionals, unless a majority of the professionals have voted to be included in the unit.

The engineers contend that under such an arrangement the wishes of a majority of the professionals can be frustrated by the nonprofessionals whenever the voting is close. NSPE suggests that the problem will remain a continuing one unless the board is overruled, since technicians in industrial employment outnumber professional engineers by 5 to 1.

Work on Ohio Chrysler Plant Slowed Down by Labor Dispute

Construction work on the new $85-million Chrysler Corporation stamping plant—to be the largest in the world—in Twinsburg, Ohio, has been slowed down again, this time by a jurisdictional dispute involving three of the building trades. The project recently bore the brunt of a building trades-industrial union jurisdictional dispute relating to construction of a railroad spur line to the plant (ENR Aug. 30, p. 79).

In the inter-craft conflict over work assignments, the carpenters have claimed the work of connecting angle curbs, made of iron, to wooden forms in cement work. Iron workers have claimed the right to hoist sheetmetal roofing, over 16 gage, to the top of the plant. Iron workers have been doing the hoisting.

Walkouts by carpenters and sheetmetal workers in protest of the assignments cut the construction crew back to about 750 men—the employment figure was reported at 1,200 prior to the spur line dispute.

Last week the carpenters returned to work under a temporary restraining order obtained in federal court by one of the contractors.

The project was originally scheduled for completion in February but under present estimates the job won't be finished until mid-May.

Labor Briefs . . .

• **Apprentices**—The number of registered apprentices in the building trades increased 11% during the year ending June 30, when the total stood at 103,612. With few exceptions the gain was nationwide. All the major trades contributed, but the biggest increase was in the trowel trades, due partly to improved reporting.

• **Merger**—The AFL and CIO central bodies in Minnesota have merged on the state level, raising the total number of consummated state mergers to 15. The new federation, which embraces some 900 local unions with a membership of 200,000, has established a "clearing house" to coordinate membership drives by its affiliates.

• **Shorter workweek**—Two more labor groups have joined the auto workers in setting their sights on shorter hours of work. At their 36th convention, AFL-CIO pressmen saw a 35-hr week as their objective. And the AFL-CIO Metal Trades Department went on record in Atlantic City as approving a government sponsored five-day, 30-hr workweek.

• **Politics**—The Missouri State Chamber of Commerce says that Gov. Fred Hall's defeat for renomination as Republican candidate for Governor of Kansas shows that labor endorsements of political candidates "do not automatically deliver the votes of rank and file union members." Because of his veto of a right-to-work law last year, Hall had received strong labor backing.

OFFICIAL PROPOSALS

Bids: October 25, 1956

Power Authority of the State of New York

ADVERTISEMENT FOR PROPOSALS
FOR
THE FURNISHING AND DELIVERY OF STRUCTURAL STEEL FOR SWITCHYARD FOR BARNHART ISLAND POWER PLANT NEAR MASSENA, ST. LAWRENCE COUNTY, NEW YORK
SPECIFICATIONS NO. PA-5-12501
ST. LAWRENCE CONTRACT NO. P42

NOTICE TO CONTRACTORS: THE POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the furnishing and delivery of structural steel for the switchyard for the Barnhart Island Power Plant near Massena, St. Lawrence County, New York, until 10:30 A.M., Eastern Daylight Saving Time on the 25th day of October, 1956, at the Authority's office, 270 Broadway, Room 1305, New York, New York, at which time and place the proposals will be publicly opened and read aloud.

The work includes the fabrication and delivery of structural steel and aluminum towers for the Barnhart Island Power Plant switchyard weighing approximately 500 tons.

The work shall be completed on or before August 1, 1957.

Plans, specifications and proposal forms for the work will be on file in the Authority's office and in the offices of the Engineer, Uhl, Hall and Rich, 230 Congress Street, Boston 10, Massachusetts, and The Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto 2, Ontario, may be inspected by prospective bidders during office hours, and may be obtained from the Power Authority of the State of New York, 270 Broadway, Room 1500, New York 7, New York, upon application and prepayment of a fee of Twenty ($20.00) dollars per initial set of contract documents and Ten ($10.00) dollars per set for additional sets, no part of which will be refunded.

Bids will not be restricted to American contractors.

Bids must be made in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 10 percent of the maximum gross sum bid.

The right is reserved to reject any or all bids.

W. S. Chapin
General Manager

PA-5-12501

Bids: October 30, 1956

Contract EXD-210.001

ADVERTISEMENT
THE PORT OF NEW YORK AUTHORITY
PORT AUTHORITY BUILDING
TENTH FLOOR
ELECTRONICS COMPUTER ROOM

Sealed proposals for altering a portion of the tenth floor of the Port Authority Building, 111 Eighth Avenue, New York 11, N. Y., will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P. M. on Tuesday, October 30, 1956, at which time said proposals will be opened and read in Room 1108.

Contract documents may be seen at the office of the Engineer of Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $20.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt in duplicate will be issued. A copy of the receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
Donald V. Lowe, Chairman

New York, October 11, 1956

OFFICIAL PROPOSALS

Bids: October 18, 1956

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, Canal Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 18th day of October 1956, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 2, Lacy Ketchum, District Engineer, 109 No. Genesee St., Utica, N. Y.						
Herkimer	U. S. 92	Lock 18 Erie Canal near Herkimer		New Lock Gates and Lowering Lower Sill	5% of Bid Plans $10	Not Published
Oneida	MTC 56-5	New York State Thruway-Mohawk Section-Sub. 2 (Thruway Connection to Utica: North-South Arterial)	1.21 (0.62 Acc.)	Grading & Drainage Hy. Sep. Weld. Plate Girder 102'	$35,000 Plans $15	$650,000
DISTRICT No. 3, Wm. Robinson, District Engineer, Weigh Lock Building, 301 E. Water St., Syracuse, N. Y.						
Onondaga	FIC 56-11	City of Syracuse: Onwego Boulevard (James St. to S.H. 54-3)	2.67	ASP. Conc. Ty. 2A = 6.13 Mi.	$440,000	$8,147,000
	FIRC 56-77	Syracuse-Mattydale, S.H. 54-3 Phoenix-Syracuse, S.H. 5274 Project No. I-IG-463(13)	(5.96 Acc.)	ASP. Conc. Ty. 1A = 0.08 Mi. Bit. D.S. Treatment = 0.14 Mi. Grading, Drainage & Misc. Work = 2.28 Mi. 6 Hy. Sep. Comp. I-Beams 155.6', 181', 125.3' 153.1', 109.3' and 196.2' 1 RR-Hy. Sep. Comp. I-Beam 390' 1 Double Box Frame Bridge 38'	Plans $100	
DISTRICT No. 5, E. G. H. Youngmann, District Engineer, State Office Bldg., 65 Court St., Buffalo 2, N. Y.						
Erie	BIST 56-9	Connection Between New York State Thruway-Niagara Section-Sub. N8 and Base Line Road (Buckhorn Island State Park)	1.18	APS. Conc. Opt. = 1.16 Mi. Misc. Work = 0.02 Mi. Comp. I-Beam Bridge = 60'	$10,500 Plans $15	$188,000
Erie	FINTC 56-1	New York State Thruway-Niagara Section-Sub. N4 (Washington St. to Franklin Sts.) Project No. I-865(7)	0.21 (0.11 Ramp)	16 Span Viaduct Structure 7 Span Elevated Ramp	$190,000 Plans $50	3,408,000
Erie	FINTC 56-2	New York State Thruway-Niagara Section-Sub. N6, Pt. 3 (Amherst to Ontario Sts.) and 5 Cross Sts. or Acc. Rds. Project No. I-865(8)	0.83 (0.74 Acc.)	9" Cem. Conc. Pavt. 2 @ 24' Var. Wide = 1.02 Mi. Asp. Conc. Pavt. = 0.04 Mi. Bit. Mac. Pavt. = 0.11 Mi. Misc. Work = 0.04 Mi. 4 Hy. Seps. Comp. W. F. Beams 134.5', 99', 129.3' & 86' 1 RR-Hy. Sep. W. F. Beam 221'	$245,000 Plans $100	4,457,000
Erie	NTC 56-3	New York State Thruway-Niagara Section-Sub. N6, Pt. 1 (Porter Ave. to Ontario St.)	2.38 (0.93 Acc.)	9" Cem. Conc. Pavt. 2 @ 24' Var. Wide = 2.65 Mi. Asp. Conc. Opt. = 0.46 Mi. Misc. Work = 0.20 Mi. 1 RR-Hy. Sep. Comp. I-Beam ±99' Var. 3 Hy. Seps. Comp. I-Beams 106.8', 54.1', & 162'	$535,000 Plans $100	9,707,000
DISTRICT No. 7, R. W. Sweet, District Engineer, 444 Van Dusee St., Watertown, N. Y.						
St. Lawrence	FATC 56-1	Massena South Side Route Pt. 1, FASH 56-13 Massena South Side Route Pt. 2, FASH 55-7 Massena-Helena Pt. 1, S.H. 1261 Project No. U-580(11)	5.13	Traffic Signal System	$4,500 Plans $10	$85,000
Clinton	CD 56-1	Macomb Military Reservation on the Salmon River at Davis Lake		Remove Existing Dam and Replacing with New Dam	5% of Bid Plans $10	129,500
DISTRICT No. 8, K. G. Rauer, Acting District Engineer, Pleasant Valley Rd., Poughkeepsie, N. Y.						
Westchester	FINETC 56-5 FINET 56-6	New York State Thruway-New England Section-Sub. NE5 (Boston Post Road to Fox Island Road) Project No. I-IN-1068(13)	1.15 (5.19 Acc.)	9" Cem. Conc. Pavt. 2 @ 37' Var. Wide = 3.68 Mi. Grading (Ramps) & Misc. Work = 2.36 Mi. Asp. Conc. Pavt. = 0.30 Mi. 3 Hy. Seps. Comp. I-Beams 139', 207', and 151.6' 1 Hy-RR Sep. I-Beam and Girder 383.9' Ramp B Structure-Sub-Structure Only	$330,000 Plans $100	$5,950,000
DISTRICT No. 10, M. E. Hoyt, District Engineer, 325 W. Main St., Babylon, L. I., N. Y.						
Nassau	FAHHE 56-3	Horace Harding Expressway Extension (Cont. 3) (Shelter Rock Road to Willis Ave.) Project No. U-862(10)	1.76 (4.58 Acc.)	9" Cem. Conc. Pavt. (with Carb. Black) 2 @ 36' Wide = 1.55 Mi. 9" Cem. Conc. Pavt. Var. Wide = 0.77 Mi. Asp. Conc. Pavt. = 3.82 Mi. Misc. Work = 0.20 Mi. 2 Hy. Seps. R.C. Rigid Frames 102.2' and 83.5' 1 Hy. Sep. Comp. Steel Girder 80'	$180,000 Plans $50	$3,377,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal-Aid Highway Act of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage) Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Laws, as set forth in "Instructions to Bidders".

The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. 603C-30) will be received at Fargo, North Dakota, until October 23, 1956 for furnishing labor and materials for Antenna Towers, Buildings, and Underground Power and Communication Lines for Extension of Radio Communication Facilities. Locations at 13 sites in North Dakota. Principal items are 1070 cu. yd. earth excavation; 200 cu. yd. concrete; sixteen 200-ft., one 140-ft., and one 100-ft. steel towers; 17 prefabricated metal buildings; 7 engine-generator sets; 50,000 ft. buried electrical cables; and other work. Government to furnish the 100- and 140-ft. towers and 9,760 ft. of the telephone cable. Completion time 300 days. For particulars address **Bureau of Reclamation**, P. O. Box 1993, Fargo, North Dakota; **P. O. Box 1050, Bismarck, North Dakota**; P. O. Box 2553, Billings, Montana; or Building 53, Denver Federal Center, Denver 2, Colorado.

Read the Official Proposal Columns of ENGINEERING NEWS-RECORD This Week and Every Week

OFFICIAL PROPOSALS

Bids: October 18, 1956

New York State Road Work

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Barge Canal Improvement Law and Highway Law, sealed proposals will be received, until 10:30 A.M., DST on October 18, 1956 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, the Governor Alfred E. Smith State Office Building, Albany, N. Y. for

Contract U.S. 94 for
New Gates and Lowering
the Lower Sill at Lock 11
Erie Canal at Amsterdam
Montgomery County, New York

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts and Accounts, 14th Floor, The Gov. Alfred E. Smith State Office Bldg., Albany, New York.

(b) Department of Public Works, 270 Broadway, New York City, N. Y.

(c) In addition to the above mentioned offices, plans, maps and specifications for Contract U.S. 94 may be examined and obtained at the office of Mr. Lacy Ketchum, District Engineer, 109 N. Genesee St., Utica 1, New York.

The deposit for Plans and Proposal Forms for U.S. 94 is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's Estimate of Cost for Contract U.S. 94 is confidential and will be made known at the time of receiving bids.

Proposals for U.S. 94 must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of five percentum, (5%) of the bid. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Barge Canal Improvement Law and to the Highway Law as set forth in "Instructions to Bidders" in the contract specifications.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: October 25, 1956

Mackinac Bridge Authority

Advertisement for Proposals
for the
Grading, Paving, Drainage Structures & Pipe Tunnel for the
Causeway & Toll Plaza
of the
St. Ignace Approach
to the
Mackinac Bridge
Moran Township-Mackinac County, Michigan

The Mackinac Bridge Authority will receive sealed proposals for the construction of Contract No. 6, Grading & Paving and Drainage Structures, for the St. Ignace Approach-Causeway & Toll Plaza of the Mackinac Bridge until 10:00 A.M. Eastern Standard Time on the 25th day of October, 1956 at the office of the Authority, 608 Prudden Building, Lansing, Michigan, at which time and place proposals will be publicly opened and read aloud.

The work includes the construction of reinforced concrete pavement, bituminous approaches and shoulders, copings and crib walls, pipe tunnel and sewers for the Causeway and Toll Plaza, on the approaches to the Mackinac Bridge.

The principal items of work include:

	Approximate Quantities
Earth Stripping	4,000 Cu.Yds.
Concrete Pavement, 9" Uniform	24,300 Sq. Yds.
Pavement Reinforcement	24,300 Sq. Yds.
Subbase	12,800 Cu. Yds.
Bituminous Aggregate Surface	570 Tons
Bituminous Concrete Wearing Course	465 Tons
Bituminous Prime Coat	3,400 Gals.
Aggregate Base Course—6"	4,500 Sq. Yds.
Curb	5,300 Lin. Ft.
Concrete Protection Coping	1,150 Cu. Yds.
Concrete Cribbing	3,000 Sq. Ft.
Borrow	50,000 Cu. Yds.
Steel Beam Guard Rail	6,200 Lin. Ft.
42" Sewer	630 Lin. Ft.
36" Sewer	400 Lin. Ft.
30" Sewer	1,160 Lin. Ft.
12" Sewer	280 Lin. Ft.
Manholes	10 Each
Catch Basins	6 Each
Sewer Rock Excavation	630 Cu. Yds.
Grade A Concrete	230 Cu. Yds.
Heating and Housing Concrete	1,380 Cu. Yds.
Sand-Gravel Fill	1,500 Cu. Yds.
Parking Gravel	2,330 Sq. Yds.
Waterproofing—2 Ply	4,800 Sq. Ft.
Waterproofing—3 Ply	1,500 Sq. Ft.
Conduit—4"	1,500 Lin. Ft.
Conduit—3"	480 Lin. Ft.
Conduit—2"	920 Lin. Ft.
Conduit—1½"	320 Lin. Ft.
Conduit—¾"	160 Lin. Ft.
Cement	8,850 Bbls.
Steel Reinforcement	26,000 lbs.

Plans, Specifications, Proposal Form and Contract Documents for the work are on file in the office of the Mackinac Bridge Authority and in the office of D. B. Steinman, Consulting Engineer, 117 Liberty Street, New York 6, New York, and may be inspected by prospective bidders during office hours.

Plans, Specifications, Proposal Form and Contract Documents may be obtained from D. B. Steinman, Consulting Engineer, 117 Liberty Street, New York 6, New York, upon application and payment of a fee of twenty ($20.00) dollars, ten ($10.00) dollars of which will be refunded upon return of the Plans to non-bidders, and all of which will be returned to bidders.

Bids must be made upon the proposal form included in the Contract Documents. Each proposal must be accompanied by draft or certified check payable to the order of the Mackinac Bridge Authority for the sum of twenty-five thousand ($25,000.00) dollars.

The right is reserved to reject any or all bids.

MACKINAC BRIDGE AUTHORITY
Prentiss M. Brown, Chairman
October 1, 1956.

Bids: November 1, 1956

New York State Thruway Authority

NOTICE TO BIDDERS

The New York State Thruway Authority invites proposals and quotations for the furnishing and installation of AUTOMATIC TOLL COLLECTION EQUIPMENT for barrier toll stations on the New York State Thruway. Full information on the Automatic Toll Collection System is available and may be obtained from the office of the Director of Purchasing, New York State Thruway Authority, Delaware Avenue Plaza, Elsmere, New York (Mailing Address: P. O. Box 189, Albany, New York).

Each proposal should be enclosed in a sealed envelope and the words "Automatic Toll Collection Equipment" should be shown, for identification, on the face of the envelope, and sealed envelope should be directed to the Authority at the above mailing address. Sealed proposals will be received until 11:00 A. M., E. S. T. on November 1, 1956 when they will be publicly opened and read. The Authority reserves the right to reject any or all proposals.

HOLDEN A. EVANS, JR.
General Manager

Bids: October 16, 1956

Power Authority of the State of New York

ADVERTISEMENT FOR PROPOSALS
FOR
RESERVOIR CLEARING
BETWEEN
WADDINGTON AND BARNHART
ISLAND POWER PLANT
ST. LAWRENCE COUNTY, NEW YORK
SPECIFICATIONS NO. PA-5-11023

ST. LAWRENCE CONTRACT NO. 31 (R)

NOTICE TO CONTRACTORS: THE POWER AUTHORITY OF THE STATE OF NEW YORK will receive sealed proposals for the Reservoir Clearing Between Waddington and Barnhart Island Power Plant St. Lawrence County, New York, until 10:30 A.M. Eastern Daylight Saving Time on the 16th day of October 1956, at the Authority's office, 270 Broadway, Room 1305, New York, New York, at which time and place the proposals will be publicly opened and read aloud.

OFFICIAL PROPOSALS

The work consists of a total of approximately 3,800 acres of clearing divided into two schedules as follows:

Schedule No. 2:	Approximately 1,900 acres
Schedule No. 4:	Approximately 1,900 acres
Schedule No. 6:	Bidders may quote on both of the above schedules under schedule No. 6

All of the clearing work under either schedule or both schedules shall be completed on or before May 1, 1958.

Plans, specifications and proposal forms for the work will be on file in the Authority's office and in the offices of the Engineer, Uhl, Hall and Rich, 230 Congress Street, Boston 10, Massachusetts, and The Hydro-Electric Power Commission of Ontario, 620 University Avenue, Toronto 2, Ontario; may be inspected by prospective bidders during office hours and may be obtained from the Power Authority of the State of New York, 270 Broadway, Room 1300, New York 7, New York, upon application and prepayment of a fee of ten ($10.00) dollars per initial set and five ($5.00) dollars per set for additional sets, no part of which will be refunded.

Bids will not be restricted to American contractors.

Bids must be made in duplicate in accordance with instructions contained in the Information for Bidders. Guarantee will be required with each bid in an amount not less than 10 percent of the gross sum bid as defined in the Information for Bidders.

The right is reserved to reject any or all bids.

W. S. Chapin
General Manager

U. S. Government

Department of Commerce, Bureau of Public Roads, September 25, 1956. SEALED BIDS will be received at the office of the Park Superintendent, Homestead, Florida, until 11:00 A. M., E.S.T., OCTOBER 25, 1956, for the construction of Project 1A3, Everglades National Park, Monroe County, Florida. Bridge with prestressed concrete superstructure or structural steel superstructure of 386 foot length and 28 foot roadway on concrete and steel pile substructure over Flamingo Canal. Project 0.095 mile. Bids for each type of superstructure will be on a lump sum basis and the approximate quantities of the most important items for the substructure are 120 cu. yd. Concrete and 1,300 lin. ft. Composite Concrete—Steel Piling. Minimum wage rates have been fixed as required by law. Plans, specifications, and proposal forms are available upon request at the offices of the Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia, and Gatlinburg, Tennessee. H. J. Spelman, Division Engineer.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4774) will be received at Ephrata, Washington, until November 15, 1956, for furnishing labor and materials for earthwork and structures for laterals, wasteways, and drains, Block 85, Royal Branch Canal Laterals, Columbia Basin Project, Washington. Location west of Othello, Washington. Principal items are 685,000 cu. yds. excavation; 2,460 cu. yds. concrete in structures; 15,500 lin. ft. concrete pipe, 6- to 60-inch; four pumping units and accessories; miscellaneous equipment and metalwork; and other work. Completion time 480 days. For particulars, address Bureau of Reclamation, P. O. Box 368, Ephrata, Washington; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-4766) will be received at Bridgeport, Washington, until November 15, 1956, for furnishing labor and materials for Brewster Flats Pumping Plants and Discharge Lines, Chief Joseph Dam Project, Washington. Location near Brewster, Washington. Principal items are 28,100 cu. yds. excavation; 1,255 cu. yds. concrete; furnishing 3,100 lin. ft. timber piles; furnishing and erecting 60,000 pounds structural steel for bridge; furnishing and installing 13,990 lin.-ft. steel pipe discharge lines; 122,500 pounds, installing pumping units; and other work. Completion time 470 days. For particulars, address Bureau of Reclamation, P. O. Box 937, Boise, Idaho; P. O. Box 765, Bridgeport, Washington; or Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

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P-2801, Engineering News-Record
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Write for details, application forms, to Personnel Director

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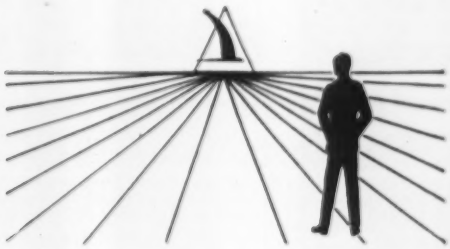
Harrisburg, Pa.



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At Northrop Aircraft in Hawthorne, Southern California, many fine engineering positions are available in electrical design, dynamics, electronics, computing, weapon systems, mechanical design, and structures.

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At Northrop you will find the success you are seeking. For complete information about the many career positions now available, we invite you to contact the Manager of Engineering Industrial Relations, Northrop Aircraft, Inc., ORegon 8-9111, Extension 1893, or write to: 1015 East Broadway, Department 4600-A, Hawthorne, California.

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NORTHROP AIRCRAFT, INC., HAWTHORNE, CALIFORNIA

Producers of Scorpion F-89 Interceptors and Snark SM-62 Intercontinental Missiles

8-A-56

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McKEE has openings for top men to fill important, permanent positions, with excellent prospects for promotion to supervisory, staff and executive posts in our expanding organization.

Our Metals, Refinery and Industrial Divisions offer you wide choice of opportunity to make fullest use of your talents in the design of refineries, blast furnaces, steel, sintering, chemical and industrial plants and their auxiliaries.

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Telephone TOwer 1-2300, Cleveland, Ohio or write to Edward A. Kelner, Arthur G. McKee & Company, 2300 Chester Ave., Cleveland 1, Ohio

Arthur G. McKee & Company

Engineering offices in

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BECHTEL

AREA ENGINEERS
SENIOR ENGINEERS

Foreign Employment
Saudi Arabia

Field Engineers with refinery or related construction experience.

Office Engineers with heavy industrial construction experience on planning, estimating, costs, material takeoff, scheduling.

No Family Housing

Send resume to:
Manager of Employment & Placement
Industrial Relations Division

BECHTEL
Engineers and Builders for Industry
220 Bush Street
San Francisco 4, California

ENGINEER

(CIVIL—OVERSEAS)

HIGHWAY MATERIALS and TESTING ENGINEER

Position: In charge of modern highway testing laboratory and materials survey in Near East.

Requirements: 15-20 years experience. Ability to organize and direct a country wide materials survey and train personnel in testing operations.

Top salary—good living conditions—liberal benefits including paid transportation for wife.

P-2966, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

CARPET MANUFACTURER WANTS TWO ENGINEERS

ELECTRICAL or MECHANICAL

Equipment design, installation and modernization; construction and plant facilities work as Project Engineers. Textile experience not necessary.

Interesting and challenging work in recently modernized offices. 37½ hour week, group insurance for you and your dependents, retirement—life insurance program. $6500-$8500/year.

Offices and main plant located in Amsterdam, N. Y. (15 miles west of Schenectady) on Mohawk River and ½ mile from New York Thruway.

Write to:

Mr. O. S. Cooper
MOHAWK CARPET MILLS
Division of Mohasco Industries, Inc.
57 Lyon Street **Amsterdam, N. Y.**

CHIEF ESTIMATOR

Well known New Jersey General Contractor needs qualified man to head Estimating Dep't., Degree Preferred. Engineering background necessary. Must have at least 10 years of successful bidding experience in all phases of heavy construction, such as Highways, Structures, Dams, Drainage, etc.

Salary $10,000.00 up. Unlimited opportunity for properly qualified man. All replies confidential. Our employees know of this ad.

P-2999, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

HEAD STRUCTURAL DESIGNER

To supervise and administer Structural Designing and Drafting Department in home office of long established Boston consulting engineering firm.

Send resume of experience, references and record of past earnings to

P-2992, Engineering News-Record
Class. Adv. Div.,
P. O. Box 12, New York 36, N. Y.

SANITARY ENGINEER

Experienced in water supply and sewage disposal. Preferably with Masters Degree. Growing organization, good salary and opportunity. Middle Atlantic State. Please state full qualifications, experience, references.

P-3038, Engineering News-Record
Classified Adv. Div., P. O. Box 12,
New York 36, N. Y.

CIVIL ENGINEER

With municipal experience on sewers and pavements to supervise field construction. Permanent position under Civil Service with retirement plan.

APPLY PERSONNEL DIRECTOR
City Hall, Royal Oak, Michigan

REPLIES (Box No.): Address to office nearest you c/o This publication Classified Adv. Div.
NEW YORK: P. O. Box 12 (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

General Supt. Engr. for Sewers and water lines must be well experienced in supervisory installation and estimating, coordinating inside and outside. Old established Company. Resume held in confidence. Columbia Constr. Co. Inc., 2108 Columbia Ave., Indianapolis 2, Ind., WAlnut 3-1567, Mr. Farrer.

Heavy Equipment Engineer with at least 2 to 3 years of Mechanical Engineering Schooling for work in the South. Full information and references in first letter requested. Reply P-2917, Engineering News-Record.

Designers—Steel, Concrete, Electrical Piping, Air-Cond., Power Plants & Industrial Bldgs. **Marbarry Corp.,** 120 Greenwich St., N.Y.C. Rector 2-3749.

Wanted: Registered Professional Engineer specializing in Soil Mechanics, capable of taking complete charge of Soil Mechanics office performing soil exploration, laboratory testing, and writing engineering reports with respect to foundation requirements. Experience necessary. Some experience in structural design of foundations preferable but not essential. Good salary commensurate with qualifications. State qualifications in full, experience resume, references and salary requirements. P-2945, Engineering News-Record.

Civil Engineers, Designers, Draftsmen experienced in the design of sewers, pumping stations, sewage treatment plants, water supply systems, structural and hydraulic design, hydraulic computations, specs. O'Brien & Gere, 400 E. Genesee St., Syracuse, N. Y.

Civil Engineers — Immediate vacancies for beginners and experienced Civil Engineers. Work related to flood control projects and hydrologic studies. Openings in Chicago and Springfield Illinois. Salary range $400-$600. Reply stating experience, location preferred and salary desired. Box P-2948 Engineering News-Record.

Registered Engineer to take complete charge of proposed Chicago office for established firm of Consulting Engineers. P-3079, Engineering News-Record.

Civil Engineers: Water Distribution—Sewer Design—construction engineering—for a public utility organization in a rapidly expanding locality—ideal working and living conditions—attractive benefits—send resume stating to: Personnel Director, The Metropolitan District, 115 Broad St., Hartford, Connecticut.

Structural & misc. steel detailer—must be experienced, excellent climate, good housing conditions, top wages. Give full particulars. Tucson Iron Works, Box 1949, Tucson, Arizona.

Engineers for municipal and industrial water supply, sewerage and treatment projects. Opportunities for permanent connection with long established firm of consulting engineers in mid-west. Both E.I.T.'s and engineers considered. Full information and references in first letter requested. P-3116, Engineering News-Record.

Highways Engineers, Designers, Draftsmen for office work in the vicinity of Louisville, Ky., on highways, expressways and similar civil works. Permanent positions for qualified experienced engineers or recent graduates—with a growing firm of established consulting engineers — Opportunity for advancement based on merit—Liberal transportation and moving allowances. Suburban living available close to office. Liberal Employee Benefits—Immediate openings—Beginning Salary Commensurate with Qualifications. Please write fully to Box P-3056, Engineering News-Record.

Architectural draftsman for office with school and church jobs to plan. Experience preferred in preliminary layout, presentation drawings and construction drawings. Permanent position for qualified man. Write P. O. Box 36 Lancaster, Ohio, giving qualifications, experience and salary, or call Lancaster 2243-W for appointment.

Superintendent or Assistant Superintendent, experienced and capable of running jobs up to 150,000. Prefer carpenter background. Salary commensurate with ability. Permanent position with Central Illinois Company for the right man. Apply to P-3100, Engineering News-Record.

(Continued on page 152)

STRUCTURAL and MECHANICAL DESIGNERS

Having experience with heavy material handling equipment

Permanent Position For Qualified Men

HOSPITALIZATION
INSURANCE
VACATION

Phone or Write Chief Engineer for interview

THE WELLMAN ENGINEERING CO.

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Drainage Engineers

FOR OFFICE WORK IN ST. LOUIS ON HIGHWAYS EXPRESSWAYS AND ASSOCIATED CIVIL WORKS

- *Permanent employment for qualified men*
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Plus Employee Benefit and Retirement Plan, Paid Vacations, Holidays, Sick Leave. Blue Cross available.

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FOR HIGHWAY BRIDGE WORK

In New York City and New Jersey

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Bridge Designers—Draftsmen
Harrisburg, Pa. College Park, Md. Ft. Lauderdale, Fla., Jackson, Miss.

Architectural Designers—Draftsmen
Rochester, Pa.

Civil Engineering Draftsmen
Jackson, Miss.

Ink Tracers—Computors
Rochester, Pa., Jackson, Miss.

Air Mail Resume TO R. L. SHAW, *Personnel Director*

MICHAEL BAKER, Jr., INC.

BAKER BLDG. *Consulting Engineers* ROCHESTER, PA.

STAFF ENGINEER MAINTENANCE SERVICES

Foreign Employment

To assist and advise operating management on all maintenance services and practices in major oil installation located in Saudi Arabia.

Must be graduate engineer with minimum of 10 years' planning and operations experience in heavy industrial and refinery installations. Proven supervisory ability and thorough knowledge of maintenance craft methods and equipment required. Minimum salary $1000 monthly plus allowances and generous benefits. Excellent promotional opportunities.

Write outlining personal history and work experience. Please include telephone number.

Recruiting Supervisor, Box 183

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505 PARK AVENUE
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CIVIL & STRUCTURAL

ENGINEERS
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Excellent Opportunity for Advancement
Liberal Relocation Allowances
Please Write Fully to or Inquire

WESTERN-KNAPP ENGINEERING CO.

760 FOLSOM SAN FRANCISCO
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MECHANICAL ENGINEERS

for

OPERATION & BETTERMENT
STEAM-ELECTRIC
PLANTS

Permanent career positions. 5 to 15 years experience; prefer ME grads—Diesel experience helpful but not essential

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With infrequent short trips to various subsidiaries in Latin American Countries

Large, old established service and supervisory organization for large group of electrical utilities

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Send detailed resume & salary requirements to Corporate Personnel Dept.

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EXPERIENCED STRUCTURAL STEEL DETAILERS AND CHECKERS

on Buildings and Conveyors. Long range program, good working conditions, vacation and bonus plan, liberal insurance benefits. Work in our Cleveland or Toledo office.

Send complete resume of experience and qualifications to:

SAMBORN, STEKETEE AND ASSOCIATES, J. H. V. EVANS

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4913 Von Epps Road, Cleveland 9, Ohio

SENIOR ENGINEER

(CIVIL—HIGHWAYS) FOREIGN EMPLOYMENT

Engineer with 15-25 years experience in highway design and construction supervision (including extensive administrative operations) required for highly responsible overseas position. Near East location. Liberal salary, transportation for family plus other attractive allowances and benefits. Send detailed personal history and experience record.

P-3156, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

RESIDENT ENGINEER AND DEPUTY RESIDENT ENGINEER

To supervise construction of $40,000,000 rockfill dam in the Middle East. Four-year completion schedule. Please send detailed experience and personal record. Specify salary expected and earliest date available.

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400 W. Madison St. Chicago 6, Ill.

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Experienced men send resume and salary expected to—

C. W. RIVA CO.
511 Westminster St. Providence 3, R. I.

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Industrial, Process & Power Piping
Heavy Mechanical & Industrial Construction
West Los Angeles and San Francisco Bay Areas
Submit Experience Record

ROSENDAHL CORPORATION
Engineering Constructors
11933 Wilshire Blvd. Los Angeles 25, California
GRanite 9-3775

POSITIONS VACANT
(Continued from page 150)

Ditcher Sales Promotion Manager Wanted: Experienced man to head sales promotional activity of leading manufacturer of expanding ditcher line. Must have sales experience and be familiar with design and application of both wheel and boom type machines. Position involves overall sales management responsibilities with distributors and key customer contacts. Age preferably under 45. Management level compensation. Provide complete experience resume with application. Reply to: Personnel Director, Barber-Greene Company, Aurora, Illinois.

Wanted: Pile driving superintendent capable of organizing, setting up, and prosecuting large projects. Must know equipment. State qualifications in full and salary desired in first reply. P-3124, Engineering News-Record.

Wanted: For Chicago area—engineer capable of estimating and managing all types of piping projects. P-3132, Engineering News-Record.

Wanted: Senior Structural Designing Engineer. Permanent position with industrial company in upper New York State. Salary up to $12,000.00 a year, based on ability. Excellent opportunity, and fine living conditions for family. P-3154, Engineering News-Record.

POSITIONS VACANT

Civil Engineer with experience in prestress concrete design to locate permanently with fifty year old firm now in production of prestress members. If necessary will train. State experience, references and educational resume. The Dextone Company, P. O. Box 606, New Haven, Connecticut.

Wanted: Draftsmen, also Bridge Designers and Highway Designers, preferably with some field experience for major highway and bridge projects. Forward education and experience records along with salary requirements. Brookhart & Tyo, Consulting Engineers, 1729 N. Front Street, Harrisburg, Penna.

Estimators and Appraisers of all trades, also sales representatives in Philadelphia, New York, Chicago, San Francisco and Los Angeles areas preferably. Relocation unnecessary. Good pay plus profit dividends. Address resume and references to Construction Survey Co., 101 Park Avenue, New York 17, New York, and to 2920 Beverly Boulevard, Los Angeles 57, California.

EMPLOYMENT SERVICES

Salaried personnel, $5,000-$30,000. This confidential service, established 1929, is geared to needs of high grade men who seek a change of connection under conditions assuring, if employed, full protection to present position. Send name and address only for details. Personal consultation invited. Jira Thayer Jennings, Dept. L, P. O. Box 674, Manchester, Vermont.

Salaried Positions $6,000 to $35,000. We offer the original personal employment service (established 46 years). Procedure of high standards individualized to your personal requirements. Identity covered. Particulars—R. W. Bixby, Inc., — Brisbane Bldg., Buffalo 3, N. Y.

POSITIONS WANTED

Construction or project manager, 48, engineering background. 30 years experience all phases heavy construction roads, bridges, hydroelectric projects, steel and concrete structures. Proven administrator and producer. Desires short term assignment. Excellent pinch hitting during sick leave, vacations or where job needs a boost. Would consider permanent connection. Available October 15. Domestic or foreign. PW-3002, Engineering News-Record.

C.E. and M.E. in power plant engineering including 28 years of diversified experience in heavy and light construction, wishes new connection as a construction manager, general superintendent, project manager, or engineer, foreign work preferred with mild climate. Experience in airfields, water distribution, disposal plants, roads, railroads etc. Now employed in Spain. Available 60 days. PW-3060, Engineering News-Record.

Executive, 19 years administrative & supervisory experience in heavy construction, incl. Govt and State projects. Bid to completion. Manage branch or project. $15,000. min. PW-3089, Engineering News-Record.

Superintendent, heavy & bridge construction, 19 years experience bid to completion, $200. PW-3102, Engineering News-Record.

Controller—seeks similar position. Over 12 yrs. engineering & construction contracting accounting experience plus 4 years public accounting. Top supervisor all financial & accounting detail. Or, will work with group of medium & smaller companies on part time arrangement to handle all bookkeeping, cost reports, income tax returns, etc. Will also install system and supervise your personnel. Work area to include N.Y.C. Westchester & Putnam counties and Fairfield county in Conn. PW-3111, Engineering News-Record.

Construction Engineer Superintendent. Age 43 BSCE. 20 years office and field experience: roads, airfields, waterworks, sewage, bridge and industrial construction: soils testing. Available for owner or contractor Eastern States. PW-3008, Engineering News-Record.

Mining Engineer — Production — Exploration — Sales Promotion. Background includes management of surface and dredging operations; geologic exploration and evaluation of non-ferrous deposits including several years in South America; sales, sales promotion and product development of earth moving and drilling equipment, and explosives. Experienced in United States Government contracts. PW-2942, Engineering News-Record.

POSITIONS WANTED

Mechanical Engineer, eighteen (18) years experience in all phases of mechanical work, usually associated with large consulting engineering offices in New York City, including petroleum piers, oil pipelines, tank forms, airports, tunnels, roads, buildings, etc. Position desired should be of responsibility level, involving reports, design, specifications, bid analysis, supervision, etc., New York or vicinity. Box PW-2944, Engineering News-Record.

Civil Eng., MS, 33, Regist. Calif., wishes to associate with consulting engineer or purchase practice. West Coast location. PW-3071, Engineering News-Record.

Seasoned Structural Engineer, registered in several states, used to handle large structural projects of any kind, particularly industrial buildings and bridges, is available for new connections, domestic, Europe or S.A. PW-3073, Engineering News-Record.

Construction Engineer Executive, 20 years experience in all phases of contractual earth moving, both dry land and hydraulic suction dredging, excavation and embankment etc., from initial investigation thru final completion. Co-ordination of labor relations, management diplomacy, both field and administrative, negotiation of special problems that require ingenuity. Either domestic or foreign PW-3108, Engineering News-Record.

BSCE PE Ohio (soils, asphalt) family, 34. Ass't. to resident engineer, $15,000,000 project. Desire engineering work in Europe. Speak German and Spanish. Available 30 days. PW-3122, Engineering News-Record.

Construction Superintendent, 25 years experience in construction of public utilities, industrial, refinery, federal, and public buildings, and military installations and housing. Qualified with references. Midwest preferred. Other locations will be considered. Available this writing. PW-3125, Engineering News-Record.

Construction Supt. or Assist. available. PW-3134, Engineering News-Record.

Civil Engineer, age 28, desires position as project engineer in heavy construction, 3½ yrs. of heavy construction experience with well known organization. Present salary $7,500 yr. New York City area only. PW-3136, Engineering News-Record.

Project Manager/General Field Superintendent. Available where scope and volume require top level ability for multi-million dollar work operations. Practical experience, know-how, includes varied types of heavy structures, both marine and land facilities for commercial, governmental, industrial services and public works projects. Strongly cost-minded producer, solidly backgrounded all phases. Prefer south eastern location. Replies confidential. PW-3132, Engineering News-Record.

Party Chief, age 27 married exp. heavy construction & preliminary surveys. Prefer N. J. PW-3138, Engineering News-Record.

Field accountant cost, payrolls field purchasing & expediting. Relocated anywhere. PW-3152, Engineering News-Record.

Construction Manager or Administr. assist. Civil Engr., estimating, cost-control & management specialist. Available now. Miller, 1609 N. McKinley, Okla. City 6.

Estimator General Contractor complete competitive bids, buy, expedite, handle subs, all office details award to final industrial, public, monumental. Long experience, excellent record handling big work now employed. PW-3131, Engineering News-Record.

Executive Engineer-Designer-Checker-Preparation specialist with unusual work-progress control. Qualified as a journeyman in electric, plumbing, carpentry, brickwork, reinforcement and structural steel prior to taking engineering. Lic. P. E. State of New York and others. Continuous background of accurate control of quantity take-off, unit costs, shipping and delivery on multi-million industrial and diversified construction. PW-3161, Engineering News-Record.

Engineer, retired, own office, desires design, estimating, steel, reinforced concrete. PW-3160, Engineering News-Record.

Engineers—Foremen—Office Men

Learn latest methods to organize and run work. Prepare for the top jobs.
Send post card for details.

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CONSTRUCTION CONSULTANTS
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Fabricators are in desperate need for detailers. Outside detailing is offering the best solution. Get in on this terrific detailing boom. Active list of structural steel fabricators for $5.00. Every state is represented. This is the only list available at this reasonable cost.

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OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. Every step your

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Dragline, 110' Boom
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STEEL SHEET PILING
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Blocks 10-15-20-25 Ton
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Late Model with double boom hoist.
Gas or diesel.
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REPLIES (Box No.): Address to office nearest you c/o This publication Classified Adv. Div.
NEW YORK: P. O. Box 12 (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

SPECIAL SERVICE

Overseas job opportunities. Survey lists all major companies hiring; how and where to apply. Only $1. Satisfaction guaranteed. Len Rathe, (Edendale), Box 26131, Los Angeles 26, Calif.

BUSINESS OPPORTUNITY

A reliable New York firm is interested in purchasing a small asphalt producing plant located Eastern United States. Will, however, consider other areas. Kindly elaborate fully first letter. All replies held confidential. BO-3135, Engineering News-Record.

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(Classified Advertising)

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Also Lincoln welder capable of welding any piece of Structural Steel. And portable Grinder suitable for finishing ends of small columns.

Apply Mr. H. C. GERRY
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PHONE 2-1669 Spartanburg.

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1½ yd. Shovel Attachment Only
Complete with necessary turntable equipment (no lagging). New in 1952. Excellent condition. Available now, price $4,850.00.
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500 HP PACKAGE BOILERS
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R. GELB & SONS INC.
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LOW COST INSTALLATION AND OPERATION
CABLEWAYS
IMMEDIATE SHIPMENT
ELECTRIC, STEAM or DIESEL
CAPACITY 3 to 20 TONS
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FOR DAMS, BRIDGES, BREAKWATERS, FILTRATION AND SEWERAGE PLANTS
FOR SPEED, ECONOMY, EFFICIENCY, FLOOD SAFETY, LABOR REDUCTION
AMBURSEN DAM CO. INC.
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2 yard shovel
Rebuilt and Guaranteed. Powered by Waukesha WAKD Diesel. Available Immediately.
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TRUCK MIXER
Used as Demonstrator for short time.
Excellent Condition.
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310 PARSONS
$21,000.00
Worked only 500 hours.
Bought for a job that "blew up"
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Seamless and Welded ⅛" to 36" O.D. All wall thickness Manufactured. Specialty large sizes. Cutting — Threading — Flanging — Fittings — Valves.
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8" B P	36#	19/35'
10" B P	42#	45/50'
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We are also interested in purchasing your surplus material.

We assure you our prices will be the best obtainable.

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Secrecy Is Dangerous

STRUCTURAL FAILURES last week of buildings under construction in Jackson, Mich., and Jackson, Miss., are now added to the earlier collapse of a school roof in Orlando, Fla., as examples of disasters that need full explanation. And the secrecy so far being maintained in Orlando could set a dangerous precedent. The architect, contractor and prestressed-concrete subcontractor are reported to have agreed to rebuild the damaged structure at their own expense, but attempts to obtain an explanation of the failure from them have been unsuccessful to date.

The roof, which collapsed during a rainstorm Aug. 31, spanned 56 ft over a one-story "cafetorium" of the newly completed school (ENR Sept. 20, p. 27). It consisted of pretensioned concrete T-beams, which rested at their ends on concrete block walls with large window openings.

If the report of an agreement among the contractors and the designers to assume the cost of rebuilding is true, then surely something must have been learned as to why the roof came down when subjected to little more than its own weight.

Knowledge of the cause of this failure would be very helpful in preventing similar trouble in the future. Any of those who have this information would perform a service to their profession if they would make it available to others. Moreover, withholding the information in the belief that silence is the best defense against criticism may actually have the opposite result. Rumors can be more damaging than facts.

It would benefit those involved in these unfortunate mishaps—as well as the profession as a whole—if the principals would release their versions of the causes.

Education for Construction

ONE OF THE REASONS FOR OUR SHORTAGE of engineers—and a good one—is that more of them are going into the contracting business. Time was when graduate engineers mapped their futures only in consulting offices or government departments. At that time, too, about all a young man needed to enter the contracting business was a span of mules and a slip scraper. Today's contractors—or at least many of their key men—need to be graduate engineers. Tomorrow, they may also have to have a masters degree in addition.

This is the new view of the contractors themselves, and it was given substance at the recent meeting of the Advisory and Governing Boards of the Associated General Contractors of America. AGC, after several years' study and consultation with engineering educators, has come up with a recommendation for adding some elective courses in construction engineering and business to the normal four-year civil engineering curriculum, and then for a fifth year of specialization leading to the degree of Master of Construction Engineering.

Here seems to be a plan that is practicable and makes sense. Too often in the past, attempts have been made to promote some kind of a special undergraduate curriculum to train students for contracting. Aside from the fact that the choice of a field of specialization is a difficult and risky business for most college sophomores, such early specialization would deprive them of education in many of the engineering fundamentals. Actually a broad basic engineering knowledge is probably more necessary for a career in construction than it is, say, for a structural specialist. Both, however, need to be educated, not just trained in a specialty.

The AGC is on the right track, with its new proposal. And its plan to establish some scholarships for this graduate work is further cause for praise.

New Look at Authorities

THE PANEL DISCUSSION centering on special districts and authorities at the recent American Public Works Association convention served a useful purpose in highlighting the need for a reexamination of the trend toward multifold creation of these single-purpose units of government. The speakers—and particularly Dennis O'Harrow, executive director, American Society of Planning Officials—predicted trouble ahead as special taxing districts and revenue-bond authorities multiply to the point where coordination is all but impossible, and control by elected officials is nonexistant. Such a viewpoint can be appreciated when it is recalled that such special governmental units have been used for schools, water, sewerage, bridges, parking garages, public transit, port facilities and even industrial buildings.

The pursuit of the authority idea has, without question, permitted construction of many urgently required public works which otherwise would have been delayed interminably. And this has come about because authorities can be—and have been—formed to escape financial debt limits imposed on municipalities; to keep projects out of politics; and to transcend political boundaries. From one standpoint these are the advantages of the authority, but in the eyes of a critic such as Mr. O'Harrow they are still tricks, used to solve problems on an expedient basis. In the long run, he holds, they would be better solved by adjusting laws so that regularly elected public officials could construct and control the facilities.

There are too many examples of useful and efficient authorities to generalize on whether this form of governmental unit is good or bad. But the present-day trend toward their widespread creation is well worth worrying about. The criticism voiced at the APWA meeting has a convincing enough ring to warrant a revaluation of the pros and cons of special districts and authorities.

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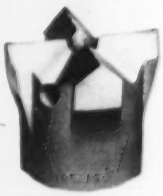

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